Whiskey Jack Forest
Independent Forest Audit
2004-2009
Final Report

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1.0 EXECUTIVE SUMMARY

This report, for the Whiskey Jack Forest (the Forest), documents the results of an Independent Forest Audit conducted by KBM Forestry Consultants Inc. All Crown forests in Ontario are required to be audited at least every five years; the requirement for independent audits arising from MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario (2003). Regulation 160/04 of the Crown Forest Sustainability Act (S.O. 1994, c. 25) (CFSA) sets out the specific requirements for conducting the audits.

KBM Forestry Consultants Inc. conducted an independent forest audit on the Whiskey Jack Forest for the five-year period April 1, 2004 to March 31, 2009. The audit assessed implementation of the 2004-2024 Forest Management Plan (FMP) and the planning process and approval of the 2009-2012 Contingency Plan. Selected portions of the planning process for the 2004-2024 FMP, the first year of which was a contingency plan, were also audited. The on-site component of the audit occurred from September 14 to 21, 2009. Document review and interviews occurred throughout the audit process. The principal auditees were both Abitibi-Consolidated Company of Canada (ACCC), a subsidiary of Abitibi-Bowater, and the Kenora District and Red Lake District of the Ontario Ministry of Natural Resources (MNR).

During the audit term, the Sustainable Forest Licence (SFL) for the Whiskey Jack Forest was held by ACCC. Circumstances related to closure of the company's newsprint mill in Kenora, Ontario and a protracted dispute between the Crown and Grassy Narrows First Nation over forest management practices on the Whiskey Jack Forest, led the company to make a request to surrender the SFL to the Crown. The Crown accepted the company's completion of its pre-surrender obligations in a letter dated September 29, 2009, at which time the company was given six months to complete all post-surrender conditions. As holder of the SFL during the audit term, ACCC was responsible for virtually all aspects of forest management planning, harvesting, reforestation, and monitoring.

Based on the audit, 21 recommendations were made. Recommendations arise from audit team observations of material non-conformances, or may be developed to address situations in which the audit team identifies a significant lack of effectiveness in forest management activities. All audit recommendations are either directed at MNR or the Forest Manager or both. The Forest Manager represents the equivalent of the SFL holder in terms of contractual obligations. Because the SFL was surrendered by ACCC, MNR is presently the defacto forest manager on the Whiskey Jack Forest. As such, MNR is responsible to address all the audit recommendations directed at the Forest Manager until a new Forest Manager is identified.

The audit team found significant issues with management of the Whiskey Jack Forest, both in planning and in on-the-ground implementation of the plan. The future forest modeled during planning, and the one associated with the selected management alternative, is inconsistent with the natural forest as described in the forest management plan. The differences are magnified by the silviculture program being implemented in that the program is inconsistent with the forest projected by the selected management alternative and is leading the forest even further away from the natural forest condition.

The regeneration methods being practised do not support the plan goal of maintaining current levels of spruce forest and will result in a further departure from what is believed to be the historic forest condition of a spruce dominated forest described in the 2009-2012 Contingency Plan. The resulting forest stands will have a greater hardwood component and lower conifer stocking than projected. This has implications for the achievement of wildlife habitat management objectives for species that rely on the development of conifer dominated cover types.

The increase in hardwood at the expense of conifer is the direct result of the absence of a tending program, beyond a small scale spacing program. This in turn is tied to the protracted dispute with Grassy Narrows First Nation over forest management practices on the Whiskey Jack Forest, including

herbicide spraying, and decision not to spray herbicide during the dispute. A lack of tending was identified as a serious issue in the previous Independent Forest Audit. Significant effort and expense will be required to retreat or otherwise manage sites artificially regenerated during the audit term to align them with outcomes projected in the 2004-2024 Forest Management Plan. The audit team also found that Free-to-Grow survey records did not accurately reflect stand attributes; both for the regular survey program and the survey of backlog areas, and therefore needs review.

The audit team found that a pesticide program intended to control an outbreak of jack pine budworm lacked an adequate analysis of alternatives from a cost/benefit standpoint. The audit team recommended that MNR be better prepared to conduct such analyses for future outbreaks.

Improvements were noted in water crossings installations (non-winter) and drainage practices on roads.

The audit team concluded that, with the following critical exception noted below, management of the Whiskey Jack Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and MNR met its legal obligations. Forest sustainability, as assessed through the Independent Forest Audit Process and Protocol, will not be achieved unless corrective measures are immediately taken to address the following issues:

Silviculture practices, including a lack of tending of artificially regenerated areas, are leading to reduced stocking of conifer and an increased component of hardwood on the Forest. This trend does not support the management intention of maintaining a conifer dominated forest, as set out in the 2004-2024 Whiskey Jack Forest FMP.

Recommendation 3 of this audit must be satisfied to bring the Whiskey Jack Forest into general compliance.

ACCC has surrendered the SFL for the Whiskey Jack Forest to the Crown; therefore the audit team makes no recommendation on licence extension.

Rod Seabrook, CEA(SFM) EMS(LA)
Lead Auditor, on behalf of the audit team

2.0 TABLE OF RECOMMENDATIONS

Recommendation on Licence Extension
Management of the Whiskey Jack Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and MNR met its legal obligations. No recommendation is made as Abitibi Consolidated Company of Canada has surrendered SFL Licence No. 542253 for the Whiskey Jack Forest to the Crown.

Recommendations Directed to Forest Manager / MNR District
Recommendation 1: MNR Kenora District and MNR Red Lake District must ensure that the LCC Terms of Reference for the Kenora and Red Lake LCCs meet the content requirements of the FMPM regarding a protocol for the functioning of multiple LCCs.
Recommendation 2: The Forest Manager must ensure that available survey information (regeneration surveys, Free-to-Grow, silviculture effectiveness monitoring, etc.) is used in the development of the silviculture program in the next FMP.
Recommendation 3: The Forest Manager must ensure that: a) the Silviculture Ground Rules, silviculture exceptions, planned renewal program and actual silvicultural intentions of the next forest management plan support the long term management direction and related silvicultural strategies, b) the connection between strategic and operational silviculture is clearly discussed in the text of the next plan, and c) the operational renewal program aligns with the planned renewal program and supports the long term management direction.
Recommendation 5: The Forest Manager must ensure that, if required, the Natural Benchmark (or equivalent) developed for the next FMP better reflects actual conditions and that, if required, targets/desired levels (or equivalent) for appropriate objectives in the next FMP include consideration for the Natural Benchmark trend line.
Recommendation 6: The Forest Manager must ensure that moose shelter patches are retained as specified in the FMP.
Recommendation 7: The Forest Manager must ensure that operators refine their work methods on fine textured soils to avoid operating during wet or non-frozen periods.
Recommendation 8: The Forest Manager must ensure that the inventory is reviewed and verified for accuracy with respect to Free to Grow records updated during the audit term.
Recommendation 9: The Forest Manager must ensure that site preparation results in the production of planting spots of the quality and quantity appropriate to meet plan objectives.
Recommendation 10: The Forest Manager must ensure that planting of red and white pine occurs on appropriate sites.
Recommendation 11: MNR Kenora District must ensure that all blocks harvested during the audit term are reviewed for slash management and, where established regeneration will not be affected a) slash be piled and burned or otherwise removed to allow regeneration of productive land, or b) if natural regeneration of these areas is not expected, then treat the area to ensure regeneration.
Recommendation 12: MNR Kenora District must ensure that: a) a review is conducted of all areas planted and seeded during the audit term and that fill planting or re-seeding occurs as necessary to support the achievement of FMP objectives, b) a review of all sites harvested during the audit term that are forecast to become conifer-leading forest units is conducted, and that tending occurs where necessary so that plan objectives can be met.
Recommendation 13: The Forest Manager must ensure that seed collection and storage meet the needs of the renewal program.
Recommendation 14: MNR Kenora District must review the Forest Renewal Trust Fund rates particularly for spruce/pine/fir and assign rates appropriate for meeting plan objectives.
Recommendation 15: The Forest Manager must develop a road rehabilitation strategy for the next FMP to ensure that unwarranted roads are rehabilitated and returned to the productive forest landbase.
Recommendation 16: The Forest Manager must develop a monitoring program to ensure that all water crossings installed during the winter are inspected immediately following the first spring thaw after their installation, and incorporate the monitoring strategy into the FMP.
Recommendation 17: The Forest Manager must ensure that the interests of public safety are paramount for establishing pit rehabilitation requirements for all pits at all times.

Recommendation 18: MNR Kenora District must ensure that a review of the original field data of the barren and scattered survey occurs and that the inventory is appropriately updated with this information.
Recommendation 19: The Forest Manager must ensure that: a) all information in the Annual Report is confirmed for accuracy prior to finalization, b) future Annual Reports contain all required discussions including progress towards achievement of plan objectives, potential implications of operations on future operations and effectiveness of road use management strategies.
Recommendation 20: MNR Kenora District must ensure that the 2008-09 Year 10 AR is revised to include the following: a) analysis/discussion of changes that may affect future levels, effectiveness and expenditures of renewal and tending operations, b) analysis/discussion of effectiveness of silvicultural treatment packages that are exceptions to the forest management guides, c) review/discussion of needed modifications or refinements to modeling assumptions, d) a summary of progress on implementation of the 1999-2004 IFA Action Plan, e) an update of the inventory and running of SFMM at plan end (2009) to determine objective achievement, f) an update of the 2004-2024 FMP social and economic description, and g) based on the determination of sustainability and the social and economic review, develop recommendations for the next FMP.
Recommendation 21: The MNR Kenora District Manager and the Forest Manager must ensure that the audit action plan and status report comply with all IFAPP submission requirements.

Recommendations Directed to Corporate or Regional MNR
Recommendation 4: MNR Region must develop the capacity to conduct risk based cost benefit analyses of proposed pest management programs in advance of future outbreaks.

3.0 INTRODUCTION

3.1 Audit Process

Independent Forest Audits (IFAs) are a requirement of the Crown Forest Sustainability Act (S.O. 1994, c. 25) (CFSA) and the Forest Management Class Environmental Assessment on Crown Lands in Ontario. Every forest management unit in Ontario must be audited by an independent party at least once every five years. The Independent Forest Audit Process and Protocol (IFAPP) was developed by MNR to provide a comprehensive and consistent method of evaluating forest management activities on Crown land. It serves as a framework that provides a structured approach to evaluating whether or not forest management activities meet the requirements governing forestry practices on Crown land in Ontario.

Within the report the audit team has made recommendations to address instances of non-conformance to a law and/or policy, or an identified lack of effectiveness in forest management activities. Recommendations are listed in the table in the previous section and presented within the main body of the report together with a brief description of the issue leading to the recommendation. A full discussion of the issue, including the link to the IFAPP principle, criteria and audit procedure, associated background information, summary of evidence and conclusion leading to the recommendation is contained in Appendix 1.

All audit recommendations are either directed at MNR or the Forest Manager or both. The Forest Manager represents the equivalent of the SFL holder in terms of contractual obligations. Because the SFL was surrendered by ACCC, MNR is presently the defacto forest manager on the Whiskey Jack Forest. As such, MNR is responsible to address all the audit recommendations directed at the Forest Manager until a new Forest Manager is identified. More detailed information on the audit process and sampling is provided in Appendix 4 of this report.

KBM Forestry Consultants Inc. conducted the IFA on the Whiskey Jack Forest for the five-year period April 1, 2004 to March 31, 2009. Audit team members and their qualifications are presented in Appendix

6. The audit assessed implementation and selected portions of planning of the 2004-2024 Forest Management Plan (FMP), the first year of which was a contingency plan, and the planning process and approval of the 2009-2012 Contingency Plan. The 2004-2005 Contingency Plan was prepared due to a delay in preparation of the 2004-2024 FMP. The Contingency Plan operating areas were derived from non-contentious areas identified from the FMP. As such, preparation of the Contingency Plans was directly tied to preparation of the FMP.

According to the Contingency Plan proposal for the 2009-2012 Contingency Plan, the Plan was required to synchronize the planning schedules for the Whiskey Jack Forest and the adjoining Kenora Forest to enable the amalgamation of the two forests.

3.2 Management Unit Description

The Whiskey Jack Forest is located in Northwestern Ontario within MNR's Northwest Region. The Forest is administered by MNR Kenora District, with Red Lake District having compliance monitoring and enforcement responsibilities for portions of the Forest north of the English River. During the audit term, the majority of wood harvested from the Forest was processed by facilities in Kenora and Fort Frances with the balance sent to facilities in Ear Falls, Chapple, Dryden, Hudson, Thunder Bay, Longlac and Nipigon. Other communities within and surrounding the Whiskey Jack Forest include Sioux Narrows, Keewatin, and the First Nations of Grassy Narrows, Whitefish Bay, Wabauskang, and Wabaseemoong.

Figure 1 depicts the Forest in relation to Northwestern Ontario and surrounding Forest Management Units and communities.

The Whiskey Jack Forest is approximately 964,000 ha in size. It occurs fully within the Boreal Forest Region of Ontario and forest cover is predominantly jack pine, black spruce, poplar and birch. Red pine and white pine also occur in southern portions of the unit in proximity to Lake of the Woods. Figure 2 illustrates the proportion of production forest by working group, exclusive of barren and scattered areas, and the age class distribution on the Forest at the start of the 2004-2024 FMP.

Soils are mostly sandy to coarse loamy in texture. Fine textured silt and clay soils are associated with approximately 15% of the Forest's area. These types of soils are highly productive but are also susceptible to compaction if care is not taken during forestry operations. Another important feature is the large number and extent of lakes and rivers on the Forest. Production forest accounts for approximately 84% of the total forested land and about 68% of the total forest area.

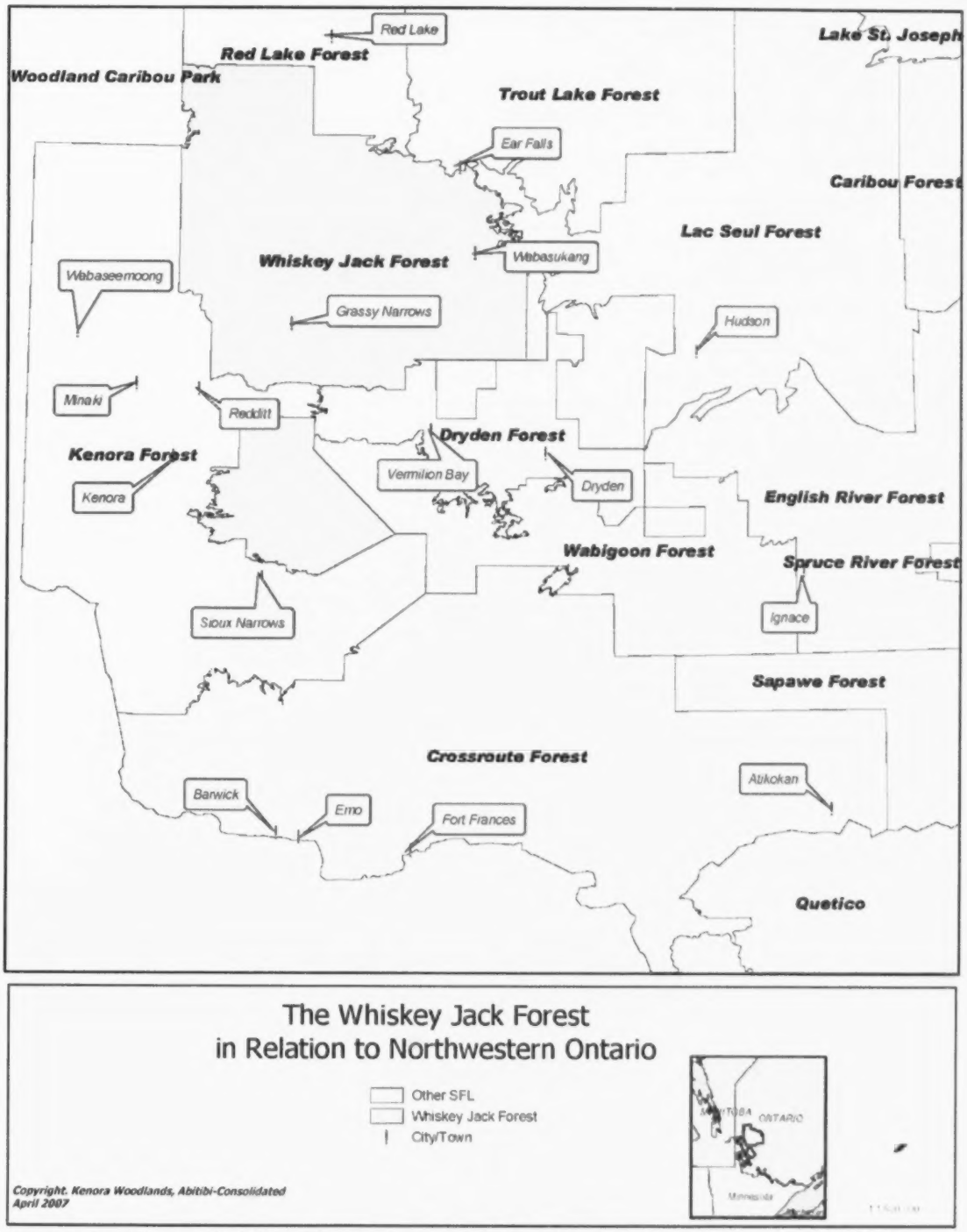


Figure 1. Location of the Whiskey Jack Forest in Northwestern Ontario. (Source: Ontario Ministry of Natural Resources)

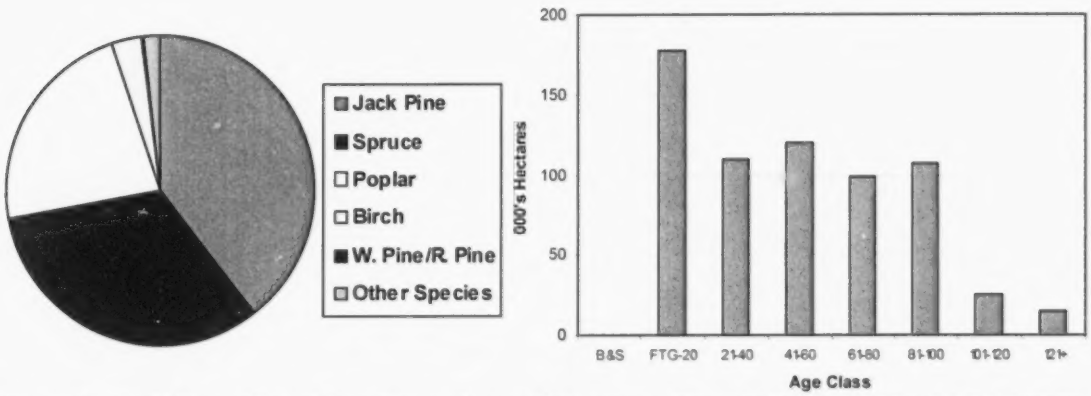


Figure 2. ***(Left)*** **Proportion of forest cover by working group. (Source: Table 1, 2004-2024 Whiskey Jack Forest FMP).** ***(Right)*** **Age class distribution. (Source: Table 5, Comparison and Trend Analysis Report).**

3.3 Current Issues

Key current issues are summarized below:

1. Industrial wood consumption has declined dramatically. The permanent closure of the ACCC paper mill in Kenora, idling of the Kenora Forest Products sawmill, the decision by Boise Cascade to not take products originating from wood from the Whiskey Jack Forest, together with the severe economic downturn in the forest products industry have combined to significantly reduce actual harvest levels compared to planned levels.

2. There is an ongoing dispute between Grassy Narrows First Nation (GNFN) and MNR over concerns the First Nation has with management of the Whiskey Jack Forest, in particular on areas the First Nation community has declared as traditional territory. During the dispute there has been a virtual halt to logging within the traditional territory and suspension of herbicide spraying under the regeneration program across the Forest.

   A Process Agreement was entered into by GNFN and the Province in 2008 committing the two parties to creating a positive, long-term relationship by reaching agreements that address GNFN's concerns; however, during a meeting between the lead auditor and GNFN representatives of the Forest Management Working Group (FMWG), established under the Process Agreement, the representatives stated that the agreement was not progressing as well as expected. The representatives felt that there is a set agenda and that MNR wants things to fit within established practices, and that nothing new has been forthcoming from the exercise. The representatives also stated that real change needs to occur and emphasized that past audits of the Whiskey Jack Forest did not provide substantial change for the process of forest management. Documentation submitted by GNFN in response to the proposed 2009-2012 Contingency Plan illustrates the depths of the divide between the community and MNR over management of the Whiskey Jack Forest, and the extent to which the community demands direct involvement in decision-making on its traditional territory on the Forest. For example, GNFN believes that setting buffer widths based on slope is simply following the rules and does not make sense ecologically. It is also felt that 30 m wide buffers do nothing for wildlife habitat.

   Forest management planning on the Whiskey Jack Forest is now complicated by the Process Agreement between the two parties that operates according to a separate timetable and has a

separate set of expectations, objectives and activities that GNFN requires are resolved before they give consent to further forestry activities within their traditional territory.

3. There was a notable lack of adequate vegetation control that was observed in previous IFAs and has carried into the current audit term. It has led to an increase in the presence of aspen and other forms of vegetation that are competing with conifer regeneration and to a forest composition inconsistent with the long term management direction set for the Forest. This situation is a result of Issue 2, described above, and is accentuated by ACCC's move to the use of lower cost renewal treatments.

4. The wood supply commitment for Weyerhaeuser Trus Joist cannot be met because the reduction in softwood harvest has resulted in a reduction in the harvest of incidental hardwood.

5. Piling and burning of roadside logging slash was not done on many of the blocks logged in 2007 and later. This will result in areas of productive land being unavailable for regeneration if left in their current state.

6. Mechanical site preparation did not provide good block coverage, conifer planting densities were lower than desired and areas seeded to jack pine were generally not successful. As a consequence, many sites will require fill planting to meet FMP objectives.

3.4 Summary of Consultation and Input to Audit

Opportunities were provided throughout the audit process for consultation with and input from auditees and other interested parties. The audit team spoke with staff from MNR, AbitibiBowater, Local Citizen Committee (LCC) members, a wood supply commitment holder, and members of two First Nation communities. In addition, comments were received in response to a questionnaire made available to the public. A summary of the methods and input is provided in Appendix 4.

4.0 AUDIT FINDINGS

4.1 Commitment

The commitment principle is deemed to be met for both the company and MNR, according to the IFAPP, since the Whiskey Jack Forest was certified under the CAN/CSA Z809-02 certification standard for most of the audit term. The company had a written environmental and sustainable forest management policy that was communicated within the organization and available externally. The company's compliance record was considered acceptable. However, recent decisions with respect to the renewal program are leading to changes in forest cover that are not fully consistent with the direction set in the FMP. The FMP, in turn, is not completely aligned with the plan's intention of producing a spruce dominated forest condition similar to that which existed historically. Adjustments in management practices and/or management direction will need to be made to address this issue.

4.2 Public Consultation and Aboriginal Involvement

Notifications to the public met FMP requirements for the 2004-2024 FMP with minor exceptions. MNR maintained a summary of public input in table form; however the record of responses to issues or questions requiring follow-up was incomplete. This was improved for the 2009-2012 Contingency Plan. Overall, records of notices and public input were well organized and maintained. Public consultation for the 2009-2012 Contingency Plan followed the process described in the associated plan proposal and represented an abbreviated version of consultation under a regular forest management plan, with mailouts, published notices to the public, and opportunities for public input on the Draft Contingency Plan at public information sessions being provided.

There were five concerns raised during preparation of the 2004-2024 FMP that had the potential to enter into the issue resolution process. Four of the five were either not pursued or were resolved without

pursuing issue resolution. The fifth, initiated by three GNFN trappers, resulted in a request to the Ministry of the Environment (MOE) for an Individual Environmental Assessment (IEA). Extensive documentation exists regarding this issue. The IEA was eventually denied by MOE; however one of the trappers has since launched a law suit, currently before the courts, challenging MNR's authority to manage portions of the Whiskey Jack Forest. There were no requests for issue resolution during preparation of the Contingency Plan.

Requirements for establishment and operation of an LCC were met for both the Kenora LCC and the Red Lake LCC. Regular meetings were held (Red Lake does not meet during the summer) and attendance was generally acceptable. Some interest groups remain unrepresented (e.g. Aboriginal communities); however, efforts are on-going to recruit representatives. Both are longstanding committees with a number of members with extensive experience serving on the committee. Both LCCs had representatives who regularly attended planning team meetings for the 2004-2024 FMP and 2009-2012 Contingency Plan. Terms of Reference were updated as of 2006 for both LCCs; however a protocol was not prepared to address the functioning of multiple LCCs on the Whiskey Jack Forest, as required by the Forest Management Planning Manual (FMPM).

Recommendation 1: MNR Kenora District and MNR Red Lake District must ensure that the LCC Terms of Reference for the Kenora and Red Lake LCCs meet the content requirements of the FMPM regarding a protocol for the functioning of multiple LCCs.

MNR maintains an extensive list of Aboriginal communities and organizations with a potential interest on the Whiskey Jack Forest. Four First Nation communities (Grassy Narrows, Whitefish Bay, Wabauskang, and Wabaseemoong) are either within or adjacent to the Whiskey Jack Forest and as such received separate invitations to participate on the 2009-2012 Contingency Plan Planning Team, with three communities accepting the invitation. The Kenora Métis Council also provided a representative to the planning team.

GNFN has continued to decline to participate in the formal forest management planning process although meetings were held between MNR and GNFN at which components of the Contingency Plan were discussed. A separate process is underway with MNR in an attempt to resolve GNFN community's concerns about forest management and other issues on the Whiskey Jack Forest. Both GNFN and Whitefish Bay First Nation stated in separate letters to MNR their concerns with the 2009-2012 Contingency Plan and dissatisfaction with the forest management planning process. This position was restated during a meeting between Grassy Narrows First Nation representatives on the Forest Management Working Group and the lead auditor. The Working Group was formed as part of the Process Agreement between GNFN and MNR.

There are fundamental differences in the viewpoints between GNFN and MNR regarding forest management principles and practices. It is the audit team's opinion that these differences cannot be resolved without the Province setting aside many of the requirements to manage the Whiskey Jack Forest under the CFSA and the FMPM, and relinquishing significant authority to the First Nation to manage portions of the Whiskey Jack Forest according to the desires of the GNFN community. The audit team further believes that the forest management planning process did not anticipate, nor was it designed to resolve the type of dispute currently being experienced on the Whiskey Jack Forest.

Background information reports were produced for each community; however there has been little to no direct participation by First Nation communities in preparation of the reports. This is related to some extent to differing expectations over the level of funding and effort required to develop the information necessary for forest management planning purposes and differences in viewpoints as to the extent of values protection required.

Wabeseemoong First Nation's principal interests are associated with the Kenora Forest but the community has recently become more involved in forest management planning on the Whiskey Jack

Forest. The community is interested in participating in a new cooperative SFL that may involve the eventual merger of the Kenora Forest and Whiskey Jack Forest; two meetings with MNR having been held to date. The community is working on a Traditional Ecological Knowledge project and has been interviewing community members and identifying values such as grave sites and trap lines. Wabaseemoong has its own geographic information system (GIS) that it is using to map these values and also values contained in MNR's database. The community has been involved in tree planting and a few community members also operate logging equipment. The community has received a 9,000 m^3 commitment for pole sized material from the Whiskey Jack Forest and the same amount from the Kenora Forest, and has partnered with a local company to build modular homes designed for northern conditions. Community members have expressed concern over herbicide spraying especially by Hydro on the power line right of way, and there are mixed feelings in the community about logging.

4.3 Forest Management Planning

During development of the 2009-2019 FMP, factors such as the collapse of world financial markets, the closure of the Kenora saw mill and the development of a Memorandum of Understanding between MNR and Grassy Narrows First Nation had significant impact on forest management planning. Through interviews and document review it was determined that there were considerable delays developing the 2009-2019 FMP. In particular there were delays achieving the planning inventory checkpoint and there was division in the planning team regarding the Long Term Management Direction (LTMD) that stalled plan development. These factors were considered in the decision by the MNR District Manager in June 2008 to halt development of the 2009-2019 FMP prior to Regional review/approval of the LTMD. Soon after, it was decided by MNR that a three year Contingency Plan was needed to allow amalgamation of the Whiskey Jack and Kenora Forests (scheduled for 2012) and to deal with the many factors impacting upon forest management planning.

Both the Contingency Plan proposal and the Contingency Plan met the requirements of the FMPM. The Contingency Plan Proposal cites only amalgamation as rationale for the need of a Contingency Plan and despite almost two full years of planning for the 2009-2019 FMP, section 3.4 of the 2009-2012 Contingency Plan notes that "there have been no new planning initiatives on the Forest". Considering the substantial planning that had occurred, the audit team suggests there should have been some mention in the Contingency Plan Proposal and the 2009-2012 Contingency Plan regarding the development of the 2009-2019 FMP, particularly the main issues encountered, and reasons for the plan delays and other factors that led to the decision for a three year Contingency Plan. This information is important to future planners and would provide clarity to the public.

Weyerhaeuser representatives may have a legitimate concern that the delay to develop a new FMP (i.e. abandoning the 2009-2019 FMP for the 2009-2012 Contingency Plan) will further compromise the ability to realize their wood commitments from the Forest. MNR is planning to amend the Contingency Plan if the current allocation is inadequate to meet wood supply commitments.

Area of Concern (AOC) planning for the 2009-2012 Contingency Plan was performed in accordance with the FMPM requirements. Supplemental Documentation 6.6.14 provided detailed discussion for a range of values and included separating similar values because of specific environmental or geographic circumstances to which the values was tied. For example, osprey nests were separated into three AOCs for the development of prescriptions that were distinctly related to environmental and geographic conditions: NE2 – Primary Osprey Nest established prior to operations; NE3 - Primary Osprey Nest in areas previously harvested; and NE4 - Alternate Osprey Nest.

Resource Stewardship Agreements (RSAs) were included in AOC prescriptions developed for tourism operations. Seventeen AOC prescriptions for tourism were included in Sup Doc 6.6.14, the majority of which followed RSA direction negotiated in the 2004-2024 FMP. The 2009-2012 CP explained that RSAs negotiated with ACCC would become obsolete although prescriptions developed therein have been carried forward.

There were 45 Silvicultural Ground Rules (SGRs) developed for the 2004-2024 FMP, which followed the requirements of the 1996 FMPM. The same SGRs were used in the 2009-2012 Contingency Plan as stipulated by the approved Contingency Plan Proposal. While the SGRs are a relatively good representation of what is on the Forest, significant issues were found regarding specific components of some SGRs related to over-estimation of expected future conifer and under-estimation of hardwood. Better use of field survey information would assist in addressing this issue.

Recommendation 2: The Forest Manager must ensure that available survey information (regeneration surveys, Free-to-Grow, silviculture effectiveness monitoring, etc.) is used in the development of the silviculture program in the next FMP.

Other, less significant issues found with the SGRs are also summarized in the audit report to aid in the development of the next SGRs.

During the previous IFA the audit team recommended that future forest management plans include thorough silvicultural strategies that support silviculture intentions and are linked to the selected management alternative. However, the 1999-2004 IFA recommendations were not available for the development of the 2004-2024 FMP and the Contingency Plan subsequently developed for the 2009-2012 term is required to use the strategic direction from the 2004-2024 FMP, therefore actions on this recommendation have not yet occurred. Similar, if not greater, discrepancies with regards to the modeled and planned silviculture program were found in the 2004-2024 FMP and the 2009-2012 Contingency Plan. The audit team recommended improvements be made to address these various issues during planning of the next FMP.

Recommendation 3: The Forest Manager must ensure that:

a) the Silviculture Ground Rules, silviculture exceptions, planned renewal program and actual silvicultural intentions of the next forest management plan support the long term management direction and related silvicultural strategies,

b) the connection between strategic and operational silviculture is clearly discussed in the text of the next plan, and

c) the operational renewal program aligns with the planned renewal program and supports the long term management direction.

The audit team inspected approximately 3,000 ha of forest treated over two years by aerial application of a biological pesticide (Btk) to control an outbreak of jack pine budworm. The treated area viewed by the audit team encompassed a marten core that is deferred from harvest to maintain marten habitat and large areas of "interior" old forest. The value of trying to "preserve" the jack pine in marten core areas is questionable. MNR representatives suggest that the main reason this strategy was pursued was to reduce the risk of catastrophic fire and this may indeed have a favourable benefit-cost ratio but the supporting analysis is limited. The evaluation of options lacked rigour and was supported by a minimal level of quantitative analysis. There were also issues in assembling the data at the regional scale to complete a detailed analysis of options. Future outbreaks will surely occur and MNR should prepare for this event by, at the very least, preparing input files for regional level analyses.

Recommendation 4: MNR Region must develop the capacity to conduct risk based cost benefit analyses of proposed pest management programs in advance of future outbreaks.

The 2004-2024 FMP described the selection criteria for harvest, renewal and tending which were consistent with the eligibility criteria. These criteria were thorough, clearly written and ranked in order of importance. Selection criteria in the 2009-2012 Contingency Plan were somewhat consistent with those used in the 2004-2024 FMP but focus was given to operational interests over de-fragmentation and other objectives. Also, some FMPM requirements were not met – documentation regarding how the criteria

reflect or are consistent with the SMA and discussion of relative importance of criterion were absent. This documentation should be included in the next FMP.

It was noted that the harvest selection criteria from the Contingency Plan Proposal, which included ensuring that planned and contingency areas from the 2004-2024 FMP were to be first priority for selection and that selections would include only non-contentious areas, were not brought into the text of the 2009-2012 CP. This would have provided better context to the selection of operations in the CP. According to MNR, 97% of the 2009-2012 contingency planned allocation (one year regular harvest area and six months of contingency area) was formerly either planned harvest or contingency harvest from the 2004-2024 FMP. The remaining 3% came from non-contentious areas deemed as optional for harvest in the 2004-2024 FMP.

According to the Contingency Plan Proposal, the AHA for the 2009-2012 term was not to exceed three-fifths of the 2004-2024 FMP AHA by forest unit (16,924 ha) and allocations were to reflect the age classes from the 2004-2024 FMP. In the 2009-2012 CP total allocation does not surpass AHA by forest unit and planned harvest generally coincides to the AHA by age class although some substitution for younger wood occurred "in order to form operational blocks". The age class substitution was considered "minor in magnitude and short-term (one year's harvest)" and therefore would "not impact long-term forest sustainability". The auditors agree with this assessment and expect that this will be taken into consideration when the remaining harvest areas are selected.

Approximately one year of allocation was planned in the 2009-2012 CP – 5,367 ha (31.6% of the three year AHA). The remaining two years of allocations were expected to be amended to the plan as needed. It was noted that the one year of planned harvest favoured the younger age classes forecast for harvest. MNR noted that there was no intent to target younger wood.

The Contingency Plan Proposal indicated that up to six months of contingency harvest area was to be identified to be utilized should unforeseen circumstances cause some of the planned harvest area to be unavailable for harvest during the 2009-2012 period. The contingency area was to be selected based on the selection criteria listed in the Contingency Plan Proposal. The 2009-2012 CP correctly noted use of contingency area, confirmed the Contingency Plan Proposal direction and noted that 2,889 ha were selected as contingency area (almost exactly six months worth of allocation). Some required documentation is missing regarding accessibility and road planning for contingency areas. This text should be included in the next FMP.

The 2009-2012 CP notes that "disturbance frequency distribution by size class was a component of the strategic planning carried forward to this contingency plan, therefore maps and associated analyses were not redone for this plan". Also, "the analysis of the effects on landscape pattern will occur as part of the development of the 2012-2022 FMP". Table FMP-16 indicates the total number and size of planned clearcuts for the one year of planned operations as well as the ratio of <= 260 ha to >260 ha clearcuts. The ratio is expected to be about 80/20 for the Boreal Forest but only 46/54 is attained "in order to create large, even-aged patches of forest for future caribou and marten core habitat areas and to move towards the natural disturbance frequency by size class template for the Forest". It is also expected by the planning team that this ratio will improve when the remaining two years of allocations are selected.

Residual stand components were considered in the 2009-2012 CP through planning for leaving uncut insular and peninsular areas in planned clear cut areas, standing individual live and snag trees and downed woody material. This planning met requirements.

According to the 2009-2012 CP there had not been any significant changes to the land base since the 2004-2024 FMP was developed. However, as early as 2006 forest managers knew that 87,000 ha (12.5% of the Whiskey Jack Productive Forest) was infested with jack pine budworm. Insect Pest Management Plans covering several forests in the area were developed and implemented in 2006 and 2007 to battle the jack pine budworm (discussed further in the Contractual Obligations section).

Approximately 30,000 ha of the Whiskey Jack Forest was sprayed over those two years. Although there were allowances in the Insect Pest Management Plans to re-direct planned harvest in the outbreak area, MNR noted that this was not considered for the Whiskey Jack Forest. The auditors believe that, at the least, the fact that an outbreak had/was occurring on the Forest and that plans had been developed and implemented in 2006 and 2007 should have been discussed in the CP rather than classifying this event as non-significant.

The 2009-2012 CP outlined a thorough program to monitor compliance, exceptions, silviculture and roads. Planned levels of monitoring were appropriate. MNR prepared the Strategic Compliance Plan for the contingency plan and committed to implementing the compliance program due to the company surrendering the SFL. No level of inspections was included in the compliance plan (this is done in the annual compliance schedule) but compliance history, issues and focus was detailed as well as compliance objectives for the term. Compliance and monitoring are discussed further in the Monitoring section of this audit report.

There were two plans within the audit term that were available for review of amendments – the 2004-2005 Contingency Plan and the 2004-2024 FMP. There were no amendments to the 2009-2012 Contingency Plan within the audit term. The 2004-2005 CP had 17 administrative amendments and the 2004-2024 FMP had 16 amendments, all were administrative except for one minor amendment to modify an osprey AOC. Amendments were normally a result of updating the plan based on actual field conditions or for providing operational flexibility in a challenging market place. The amendment classifications were appropriate, the number of amendments was not large, and the issues for amendments were common ones.

The 2004-05 Annual Work Schedule (AWS) was also the 2004-2005 Contingency Plan for the Whiskey Jack Forest until the 2004-2024 FMP was approved and implemented in February 2005. According to the 2004-2005 AWS/Contingency Plan text "the Contingency Plan is in effect until the 2004-2024 FMP is approved and implemented. Upon implementation of the FMP, the Contingency Plan will expire. Following that the 2004-2005 Annual Work Schedule will come into effect until March 31, 2005". It is not clear from this text what effect moving from the 2004-2005 Contingency Plan to the 2004-05 AWS will have on forest operations included in the text/tables. This should be clear for public review.

The audit team found a lack of agreement between text and tables during its review of the AWSs. For example, the 2004-2005 Contingency Plan/AWS text noted 5,971 ha planned for harvest while tables indicated 6,866 ha. This may be due to revisions/amendments made to the document during the year but there are no version numbers or other identifier to indicate possible differences. There were also discrepancies and issues with other AWSs – the 2005-06 'current' version had highlighted changes throughout. The 2006-07 and 2007-08 AWS table and text values were not always in alignment. These variances may have been due to different document versions (i.e. the AWS text was usually in Microsoft Word or Adobe Acrobat format and the tables in Microsoft Excel) or are simply errors. Although there were fewer issues with the 2008-09 AWS it is suggested that a document control protocol be developed and implemented to improve the quality of hard copy and electronic versions of AWSs and other documents. These public documents should be accurate and complete.

AWSs during the term indicated more than one year's worth of allocations to "allow flexibility". The flexibility provided was very large in a few AWSs. For example; the 2005-06 AWS included 64% of the 2004-2009 allocation, which is over triple the average annual allotment. Reasonable rationale was provided for the large yearly allocations. Overall, there was good correlation between the AWSs and the 2004-2024 FMP. All components were completed and included required information.

Forest Operation Prescriptions (FOPs) for harvest, renewal, and maintenance (tending and protection) operations were consistent with the SGRs in the applicable FMPs and were prepared according to requirements in the FMPM and FIM, with one exception – the FOP revision process was not followed. Instead of verifying prescriptions in advance of operations, changes to prescriptions were made and

submitted annually to MNR. However, according to the 2009 FMPM, changes to silviculture prescriptions now need only to be maintained by the SFL holder, so no recommendation is made in the audit.

4.4 Plan Assessment and Implementation

Plan Assessment

The Forest was generally well described in the 2004-2024 FMP and reflected the geology, soils, and sites as well as depletions, accruals and FEC types viewed during the audit; however little analysis and discussion regarding the historic forest condition and related management implications was presented in the FMP and the available information was not incorporated into the selected management alternative.

While the forest description text in the 2009-2012 Contingency Plan was a marked improvement when compared to the predecessor, the strategic direction from the 2004-2024 FMP was brought forward to the 2009-2012 Contingency Plan, and therefore the Natural Benchmark (NB) was again not a reflection of the natural forest as described in the Contingency Plan. The recommendation for this finding is included in Recommendation 5 below.

A number of objectives in the 2004-2024 FMP and 2009-2012 Contingency Plan had targets based on the 'natural bounds of variation'. The 'bounds' were derived from +/- 20% of the highest and lowest points of the Natural Benchmark. The issue is that the benchmark starts at a current condition that had over-representation of mixed wood and jack pine stands and under-representation of spruce. In addition, the objective targets were not linked to the trend line of the NB. As a result, the target of staying within the natural bounds could be met even while the management strategy moves away from the Natural Benchmark. For example, the NB indicates a slow steady rise of jack pine into the future but the selected management strategy decreases slightly through time.

Recommendation 5: The Forest Manager must ensure that, if required, the Natural Benchmark (or equivalent) developed for the next FMP better reflects actual conditions and that, if required, targets/desired levels (or equivalent) for appropriate objectives in the next FMP include consideration for the Natural Benchmark trend line.

Areas of Concern

The field portion of the audit included field examination of a number of harvest blocks in which AOCs were established to protect known values. Included in the field sample were AOCs protecting lakes and streams as well as nesting sites of eagles, ospreys and herons, and moose aquatic feeding areas. A number of tourism AOCs were also viewed.

Examination of AOCs from the air and on the ground, as well as on supplemental aerial photography showed that AOC boundaries were maintained. AOC prescriptions afforded appropriate protection to the values and followed FMP and AWS direction.

Harvest

A sample of harvesting operations was audited in the field by truck and helicopter in September 2009. The sample included harvest operations for each of the contractors that worked on the Forest during the audit term, across all seasons and included full tree to roadside and some cut-to-length operations. Roadside operations included round wood processing and chipping. Salvage of blown down timber was also viewed.

Block boundaries followed FMP/AWS mapping and good cut block boundary control was viewed during the audit. According to compliance records, there were a few trespasses during the term but they were not large. Continued training and use of GPS devices is reducing this issue on the Forest.

Harvesting operations audited showed a high level of compliance, particularly in light of the poor market conditions during most of the audit term that resulted in downsizing and layoffs across the sector. There was one notable exception on Puzzle Lake Road where there was some site damage and utilization issues. These problems will likely be overcome through further training and monitoring. Given the fact that this was an isolated case, no recommendations for corrective action are required.

A number of harvest blocks were visited that were to include moose shelter. In several cases, moose shelter patches had been harvested and had not been left as required.

Recommendation 6: The Forest Manager must ensure that moose shelter patches are retained as specified in the FMP.

Site disturbance from rutting was identified as an issue in the previous IFA. This problem has been virtually eliminated on all sites examined during this audit. Fine textured soils are common on portions of the Forest. These soils are vulnerable to compaction and many sites showed evidence consistent with this type of damage (i.e. reduced regeneration of trees along machine routes). These sites cannot be operated upon during wet conditions or a non-frozen condition. In addition, approximately half of the harvest blocks observed by the audit team had operations that extended beyond one season. Many of these blocks were re-opened on several occasions. This practice can exacerbate site damage from compaction and creates compliance monitoring issues.

Recommendation 7: The Forest Manager must ensure that operators refine their work methods on fine textured soils to avoid operating during wet or non-frozen periods.

Silviculture

For the five-year term being audited, the audit team viewed a representative sample of each type of regeneration and site preparation operation conducted annually to assess the effectiveness of the silviculture prescriptions. Aerial photographs, maps, Annual Work Schedules, Annual Reports and Forest Operations Information Program (FOIP) information was used to aid in the audit of the renewal activities.

Operations viewed by the audit team included site preparation, seeding jack pine following site preparation, planting (with and without site preparation) and natural regeneration mainly on hardwood-leading/mixed wood and lowland sites. Slash management and the silviculture exception of full tree harvesting on very shallow soiled sites were also audited. It was evident at several sites that conifer establishment is being hampered by competition. Tending is discussed later in this section.

Renewal operations were consistent with locations in the FMP/AWS in most cases and silviculture mapping was generally well done. This included those areas reviewed in concert with the Specified Procedures Report.

Free-to-Grow (FTG) record updating completed during the audit term was not always accurate. This finding is based on some obvious issues noted during the FTG program review. For example, some areas dominated by jack pine with a small spruce component were recorded in the inventory as spruce stands with a small component of pine; the opposite was also found. Based on the sample audited, the quantity and significance of discrepancies found indicated a systematic data entry issue that needs to be corrected. The monitoring section contains a full account of the silviculture monitoring program including FTG assessments conducted during the audit term.

Recommendation 8: The Forest Manager must ensure that the inventory is reviewed and verified for accuracy with respect to Free to Grow records updated during the audit term.

Site preparation (trencher) was under-achieved during the audit term - about 7,800 ha of 15,922 ha planned was completed (~50%). The work was often too light and spacing was too wide between passes leading to reduced planting spots on many sites.

Recommendation 9: The Forest Manager must ensure that site preparation results in the production of planting spots of the quality and quantity appropriate to meet plan objectives.

The planting program during the audit term exceeded the planned program - 11,850 ha versus 6,278 ha (190%) but due to the under-achievement of site preparation, a large component (~50%) was direct plant (i.e. planted without site preparation).

A review of planting density from the Annual Reports indicates a pronounced reduction of seedlings per hectare during the audit term (average 2,000 seedlings/ha in 2004-05 decreasing to 1,334 seedlings/ha by 2008-09). Ingress was sparse on many of the sites viewed and was generally limited to jack pine on shallow soiled/rocky upland areas and black spruce on some lowland sites. Consequently, there will be a need for fill planting on many sites to meet plan objectives.

In spite of vegetative competition on many sites (discussed later), most black spruce stock that has thus far survived had excellent growth; however, it was noted that the stock selected for some very shallow or wet sites did not perform well. Alternative stock may be preferable on these sites. It was also observed that few white spruce, red pine or white pine were planted during the term. The plan target to enhance red and white pine on the Forest will not be met unless treatments include these species on appropriate sites.

Recommendation 10: The Forest Manager must ensure that planting of red and white pine occurs on appropriate sites.

It was noted that there was no plan objective/target to maintain on the Forest (other than red and white pine) the presence of less common tree species such as white spruce or black ash. This should be considered for the next FMP.

Many areas that were seeded were not well stocked and will require fill plant/re-seeding to meet plan objectives. Under-stocking of seeded areas is mainly a result of low germination due to light and wide site preparation.

Slash management during the audit term was variable. At the beginning of the audit term effort was made to pile and burn slash; however, the company did not conduct a slash management program from 2007 to 2009. If left untreated, this will effectively remove large areas of productive land from the land base, likely for decades.

Recommendation 11: MNR Kenora District must ensure that all blocks harvested during the audit term are reviewed for slash management and, where established regeneration will not be affected
a) slash be piled and burned or otherwise removed to allow regeneration of productive land, or
b) if natural regeneration of these areas is not expected, then treat the area to ensure regeneration.

Possible compaction of fine-textured soils, as previously discussed, may be the cause of large grassy or open patches observed on many of these sites. Poplar shoot blight is also an issue on a majority of the Forest; regenerating poplar trees are being delayed and damaged by this disease. As a result, the required 70% stocking may be difficult to achieve on some of these sites. Related model inputs may need to be revised in the next FMP to ensure consistency with field conditions.

Tending was an issue on the previous two audits and is considered the most important issue on the Forest in this audit. Little tending was completed during the audit term. Chemical tending was planned in the 2004-05 AWS and 2005-06 AWS however no program was carried out. The reason stated in the

associated ARs for cancellation of the planned spray program was "concerns about the use of herbicides from stakeholders on the forest". In subsequent AWSs no specific area for spraying was identified, although it remained an option, subject to discussions with First Nations and stakeholders, however, no spraying was conducted in the remaining years of the audit term.

Tending completed consisted solely of pre-commercial thinning of 1,370 ha of 2,900 ha planned (~47%), which was well done. No chemical, mechanical or manual plantation cleaning occurred even though 8,737 ha were planned. The lack of cleaning, particularly on areas planted and seeded, is considered by the audit team to be a crucial finding. Many sites viewed require some form of competition control to meet plan objectives. In the absence of a competition control program, the Desired Future Forest Condition described in the 2004-2024 FMP and the 2009-2012 CP will not be achieved. Site preparing, planting and seeding of areas without effective competition control is also viewed as a loss of value.

ACCC chose to suspend the vegetation control program in the final year of implementation of the 1999-2019 FMP while discussions were taking place with Grassy Narrows First Nation; a community that is generally against the use of herbicides. Because several artificial renewal sites on the Whiskey Jack Forest were in need of tending at the time to meet plan objectives, the audit team for the 1999-2004 IFA recommended that ACCC implement an approved vegetation control program; however, no vegetation control program occurred during the 2004-09 term. Document review suggests that the company considered replacing aerial spray with ground spray for several candidate vegetation management sites but no ground spray was conducted. Documents also showed that the company chose not to spray during implementation of the 2004-2024 FMP in order to avoid the anticipated political backlash from Grassy Narrows First Nation.

Some older FTG areas viewed during the audit were vigorous and composed of almost pure conifer. These areas demonstrate the capacity of the Forest under an effective competition control regime and are the model for the Desired Future Forest Condition as described in the FMPs. According to silviculture monitoring completed during the audit term, about 22,000 ha of older disturbed area requires competition control in order to meet regeneration standards. The combined effort of tending requisite areas renewed during the audit term and these older stands will be considerable.

Recommendation 12: MNR Kenora District must ensure that:

a) a review is conducted of all areas planted and seeded during the audit term and that fill planting or re-seeding occurs as necessary to support the achievement of FMP objectives,

b) a review of all sites harvested during the audit term that are forecast to become conifer-leading forest units is conducted, and that tending occurs where necessary so that plan objectives can be met.

Even though there were numerous sites that required fill planting or other re-treatments to ensure plan objectives could be met, few remedial treatments occurred during the audit term (51 ha of re-planting). The recommendations associated with this section should lead to the re-treatment of a significant number of blocks.

No tree improvement activities were conducted during the audit term. However, managers of the Whiskey Jack Forest were an active participating member of the Superior Woods Tree Improvement Association. Any activities carried out on the Association's orchards are the result of decisions made by the Association.

At the time of the audit two of three jack pine seed lots stored will not meet the annual seed supply requirements noted in the 2009-2012 Contingency Plan. There should be at least a few years worth of seed stored for each species/seed zone combination on the Forest.

Recommendation 13: The Forest Manager must ensure that seed collection and storage meet the needs of the renewal program.

Underachievement of many planned renewal activities during the term was partially due to the reduced harvest level during the term but was largely due to selecting new less intensive treatments for many stands (for example, many areas planned for 'Intensive' treatments – site preparation, planting and tending – were simply direct planted – a 'Basic' treatment). Based on poor field results (as discussed previously in this audit report), it appears that reducing silviculture costs, rather than adjusting operations according to actual field conditions, was the main reason for changing from preferred to alternate prescriptions in many cases. The cycle of silviculture cost reduction started with selecting less intensive/costly options to implement in the field, building a surplus in the Forest Renewal Trust Fund (FRTF) and then using the surplus as evidence in the request to reduce contribution rates during the term.

During the audit term the company requested contribution rate decreases for spruce, pine and fir. In spite of MNR's own information that indicated problems with the renewal program, MNR approved on two occasions during the audit term the company's request for reductions in the FRT fund contribution rate for spruce, pine and fir. FRTF funding is also discussed in the Contractual Obligations section of this report.

Plan objectives and the desired future forest condition on many sites will not be achieved with the renewal options chosen, particularly in light of the operational issues noted. Adequate renewal funding is needed to ensure that appropriate silviculture is completed and plan objectives can be met. Additional funding will also be needed to fulfill actions for several recommendations in this audit report.

Recommendation 14: MNR Kenora District must review the Forest Renewal Trust Fund rates particularly for spruce/pine/fir and assign rates appropriate for meeting plan objectives.

It is obvious from the findings above that there was considerable erosion of the silviculture program on the Whiskey Jack Forest over the past several years, particularly later in the 2004-2009 term:

- vegetation control was not conducted,
- site preparation program was reduced and not closely monitored for effectiveness,
- the planting program focused on direct planting with little control of density,
- planting density decreased significantly,
- seeding was not always effective,
- adequate seed was not maintained for some seed zones, and
- slash management decreased significantly.

Appropriate actions to address the recommendations provided are needed to ensure plan objectives are met and to work towards a desirable future forest condition. This work should not be delayed and will come at significant effort and cost. Otherwise, a steady erosion of a conifer-dominated forest condition to one with significantly more mixed woods at reduced stocking can be expected with the continuance of this silviculture program.

Access

During the field portion of the audit, several harvest blocks were viewed where road rehabilitation should have occurred. Road rehabilitation can provide a means to effectively return land to the productive land base as well as eliminate unnecessary and disproportionate loss of productive land where excessive road building has occurred. A road rehabilitation strategy would assist in conducting the work efficiently.

Recommendation 15: The Forest Manager must develop a road rehabilitation strategy for the next FMP to ensure that unwarranted roads are rehabilitated and returned to the productive forest landbase.

Numerous water crossings and drainages were examined during the audit with marked improvements compared to that described in the past IFA. Water crossing installations that were performed in winter

were found to be inadequate or failing. Erosion of winter road surfaces and unstable slopes were found at several water crossings. Monitoring is required to properly address the potential failure of water crossings that are installed during the winter. A monitoring program should be developed and incorporated into the FMP that includes monitoring crossings the spring following installation.

Recommendation 16: The Forest Manager must develop a monitoring program to ensure that all water crossings installed during the winter are inspected immediately following the first spring thaw after their installation, and incorporate the monitoring strategy into the FMP.

Aggregate pits were generally found to be in good condition, the result of the cooperative effort between ACCC and MNR to monitor and rehabilitate pits where necessary. One aggregate pit was found to have been operated since the rehabilitation effort was completed, without proper rehabilitation afterwards as required by the Aggregate Resources Provincial Standards. This condition may present a public safety hazard if left unaddressed.

Recommendation 17: The Forest Manager must ensure that the interests of public safety are paramount for establishing pit rehabilitation requirements for all pits at all times.

4.5 System Support

The Human Resources component of IFAPP Principle 5 is deemed to be met for both the company and MNR, according to the IFAPP, since the Whiskey Jack Forest was certified under the CAN/CSA Z809-02 certification standard for most of the audit term.

Information necessary for planning, implementation and reporting on forest management was generally thorough and well maintained. Much documentation is managed electronically, including maps and the associated attribute information. Paper records at MNR's Kenora District office were well maintained, typically in binder form and information was readily retrievable. Virtually all of the information associated with managing the Whiskey Jack Forest had been transferred from ACCC to MNR at the time of the audit, as part of the SFL surrender process.

4.6 Monitoring

Silviculture

The silviculture monitoring program was assessed through interviewing company and MNR staff, examining actual field data, reviewing all Annual Reports, and through viewing a sample of sites deemed FTG during the audit term. MNR records of silviculture effectiveness monitoring were also reviewed.

The company invested significant resources in completing a very large silviculture monitoring program during the audit term. The regular FTG program (18,000 ha) was completed by company staff mainly by helicopter where appropriate but also through ground plots when more intensive assessment was required. The barren and scattered/backlog update project (93,000 ha) was completed by a contracted firm.

The audit included a ten percent sample, mainly by helicopter, of the regular and backlog update assessment areas. It was found in many of the backlog update areas deemed FTG that the hardwood composition was under-represented and that age and height was under-estimated in the inventory. The extent of the discrepancies between the original survey data and the status of the surveyed areas as observed by the audit tam could only be attributed to inaccurate calls during the original survey. Other than age, similar issues were found with the regular FTG program while stocking was also sometimes over-estimated and broad stratification was also noted.

It is estimated that the barren and scattered survey cost over one-half million dollars to complete (~$6/ha) but timing of the assessment and the methodology required for updating the inventory reduced the accuracy of the product. It is important that future surveys are completed in a manner that allows for accurate hardwood estimation and that the inventory updating process maintains the accuracy of field information.

In the Plan Assessment and Implementation section of the audit report a recommendation is made to review FTG records updated during the audit term and ensure the data is accurate. The following recommendation builds on that by ensuring that the original field data is fully incorporated.

Recommendation 18: MNR Kenora District must ensure that a review of the original field data of the barren and scattered survey occurs and that the inventory is appropriately updated with this information.

The level of silviculture assessment completed by the company during the audit term was appropriate and consistent with past operations and natural disturbances and was sufficient for reporting on the effectiveness of forest operations in meeting plan objectives. However, as discussed, apparent data entry errors were found and there were notable issues with some calls. The audit team believes that, following the update and verification, as recommended by this audit, the inventory of the barren and scattered areas will suffice for strategic-level planning until the next full inventory is completed, the tentative delivery schedule for the next forest inventory being 2015.

Since 2006, MNR has conducted an annual Silviculture Effectiveness Monitoring (SEM) Program. The program has focused on verifying FTG calls and checking effectiveness of silviculture treatments such as planting and site preparation. Through the SEM program it was determined that SGR standards were rarely met on FTG areas mainly due to under-stocking, particularly of desired conifer species, versus the regeneration standards. It was also found that direct planting did not result in adequate stocking and site preparation was too wide to allow full stocking of sites. SEM results confirm audit findings related to under-estimation of hardwood and over-estimation of stocking in FTG areas and concerns with light and wide spacing of site prepared areas and wide spacing/missed areas in direct planted areas.

Recommendations provided in the Plan Assessment and Implementation section were made to improve the site preparation, planting, seeding and tending programs. The audit team expects that actions taken for these recommendations will include a thorough review of silviculture operations that occurred during the audit term and significant effort in re-treating and/or tending of several blocks. Completion of this work will be vital, particularly to the future SFL holder. As a result, extra care should be taken to fully and accurately monitor and record these efforts.

Compliance

MNR developed annual compliance operating plans (ACOPs) during the audit term that described actual compliance targets by forest operation. Planned compliance monitoring rates in the ACOPs varied during the term. The 2006-07 ACOP notes that the harvest target monitoring rate of 25% has never been achieved so the target was dropped to 10% and modest renewal targets were reinstated. Similar rates were maintained for the remaining two years of the audit term. MNR staff noted that the changes to targets during the audit term were a result of achieving a balance between targets suggested by the Forestry Forum and resources to complete the actual tasks. Based on audit results and other MNR initiatives during the audit term such as silviculture effectiveness monitoring, the targets set in the more recent ACOPs are appropriate and adjustments can be made as necessary.

Viewing supplemental aerial photography (SAP) is an efficient way to augment the compliance monitoring program. Road layout, boundary control, residual standing individual and patches of trees and slash/chipper debris management are some of the operations that can be readily observed on SAPs. MNR staff noted that SAPs were requested from the company during the term but that the company was

unwilling to provide them. Source data, including SAPs, is required to be provided by SFL holders to MNR (FIM 2007); this is normally not an issue.

According to the 2008-09 Annual Report MNR certified inspectors completed 109 inspections during the audit term. Although the ACOP targets were not met in some years during the audit, this is an appropriate amount of inspections by MNR, particularly in light of the reduced operations later in the term. Reports reviewed were detailed and many included useful digital images.

The Strategic Compliance Plan for the 2004-2024 FMP was completed by the company and met requirements. Due to the imminent surrender of the SFL by ACCC, MNR authored the Strategic Compliance Plan for the 2009-2012 Contingency Plan. This document was also well written and met requirements and indicated that MNR will assume responsibility for compliance monitoring in the absence of a new forest management group. Each of the Annual Work Schedule submissions during the audit term included an Annual Compliance Schedule. The Annual Compliance Schedules described the planned compliance monitoring program for the year, culminating in a table that summarized all planned operations by expected start season.

During the audit term ACCC maintained its compliance oversight role by developing the required compliance documents, inspecting operations and providing education/training to staff and contractors/overlapping licence holders. According to the Strategic Compliance Plan in the 2004-2024 FMP, overlapping licensees were responsible for construction and maintenance of all roads on their operations and the identification of all AOCs and harvest block boundaries. Therefore Overlapping Licensees were only required to be compliant, not complete inspections, etc. MNR confirmed that this arrangement occurred during the audit term.

MNR had little involvement with the company's internal Environmental Management System, training and education program but believe that a good program was in place, based on the relatively good compliance record of the company; the auditors concur. MNR did assist the company with Forest Operations Inspection Program training during the audit term.

According to the Year 10 Annual Report, the company completed 413 inspections during the audit term. This level was appropriate for the reduced operations that occurred during the term. Company reports reviewed were generally good and, according to MNR and audit review, content improvements were made during the term. MNR noted that compliance report submissions by MNR and ACCC often did not meet the required timelines earlier in the audit term but that both parties had improved in this respect.

Water crossing installations, roads issues, small trespasses and operating near unmapped streams were the common non-compliances found during the audit term. Overall, the company found 14 non-compliances during the term (a 96.6% compliance rate based on 413 inspections) and MNR found 20 (an 81.7% compliance rate based on 109 inspections). It is common for discrepancies in reported compliance rates between forest management firms and MNR but the 15% difference on the Whiskey Jack Forest during the audit term suggests inconsistent compliance interpretation. In addition, differing opinion regarding compliance was highlighted in two annual reports during the term - "The company does not agree with all of the MNR's findings...It was requested these reports be re-opened and their compliance status be changed to in compliance". MNR noted that the compliance status of these issues was reviewed and found to be correct so no changes were made to compliance reports as a result of the company's request.

As discussed, ACCC has now surrendered the SFL to MNR and a new entity will one day manage the Forest. Forging a cooperative relationship should be a priority of MNR and the new managers.

Annual Reports

Annual reporting during the audit term was fairly well done. The ARs were generally well written, numbers in text and tables were typically in agreement and 'to date' summaries were usually correct; however there were some concerns noted regarding the accuracy of some information. Based on the field audit, the activities conducted during the term, including monitoring and assessment, were summarized in the ARs.

In addition to the numeric errors, potential implications of deviations from plan values were rarely discussed or were discussed with little detail. For example, deviations between planned and actual levels were provided for all activities and reasoning was often provided for achievement rates but discussion of how this affected or will affect plan objectives did not occur. Also absent in the ARs was discussion regarding the implications of silviculture success (a very important measure of the ability to successfully apply renewal prescriptions) on the achievement of plan objectives.

As discussed previously, the lack of tending during this audit term raises significant concerns regarding objective achievement and future forest condition. However, there is limited discussion in the ARs regarding the possible affects due to lack of a tending program. One AR statement - "Prompt renewal activities with the use of superior growing stock are assisting to offset the absence of chemical tending" - actually raises more questions than are answered.

ARs are required to discuss monitoring of exceptions to forest management guides, reasons for non-compliances, and the effectiveness of road use management strategies, among other things; however, discussion on these required topics was limited in the ARs.

ARs should be a clear and accurate account of annual forest operations but are often inadequately completed. ARs normally meet the basic accounting/summary of operations but miss the deeper discussions required of the FMPM. Moving forward, this should be considered during development of ARs.

Recommendation 19: The Forest Manager must ensure that:
a) all information in the Annual Report is confirmed for accuracy prior to finalization,
b) future Annual Reports contain all required discussions including progress towards achievement of plan objectives, potential implications of operations on future operations and effectiveness of road use management strategies.

4.7 Achievement of Management Objectives and Sustainability

Year 10 Annual Report

The Year 10 AR (2008-09 AR) was a fairly accurate and complete compilation of activities that occurred during the 2004-09 term but some errors were noted when comparing the Year 10 AR values to a summary of the ARs. Besides relatively minor accuracy issues, the Year 10 AR, as was the case for the regular ARs, lacked most of the deeper analyses and discussions that are required. Bearing in mind the numerous and considerable issues noted in the ARs and witnessed during the audit, the Year 10 AR should have been a substantial document that 'set the stage' for the next FMP. Rather, the tendency in the Year 10 AR was to provide cursory explanations for many important trends, delay required analyses and make poor excuses, such as the 2009-2012 Contingency Plan's utilization of the 2004-2024 FMP strategic direction, for not completing required work. In summary, the level of analysis and discussion in the Year 10 AR is deemed to be sub-par and inadequate. This must be rectified so that gains in knowledge made over the audit term are available for use during the development of the next full FMP for the Whiskey Jack or amalgamated Forest, which was already in progress in the fall of 2009 during the audit.

Recommendation 20: MNR Kenora District must ensure that the 2008-09 Year 10 AR is revised to include the following:

a) **analysis/discussion of changes that may affect future levels, effectiveness and expenditures of renewal and tending operations,**
b) **analysis/discussion of effectiveness of silvicultural treatment packages that are exceptions to the forest management guides,**
c) **review/discussion of needed modifications or refinements to modeling assumptions,**
d) **a summary of progress on implementation of the 1999-2004 IFA Action Plan,**
e) **an update of the inventory and running of SFMM at plan end (2009) to determine objective achievement,**
f) **an update of the 2004-2024 FMP social and economic description, and**
g) **based on the determination of sustainability and the social and economic review, develop recommendations for the next** FMP.

Achievement of Management Objectives

Ten of the 16 objectives set in the 2004-2024 FMP were achieved. The silviculture objective was not met since the program being applied does not support the forecast in the Selected Management Alternative. In addition, the audit team does not believe that the objectives for forest structure or for maintenance of habitat for selected wildlife species or marten will be met in practice due to the disconnect between the future forest condition as represented in modelling compared to the actual forest resulting from the silviculture program being applied on the ground. The silviculture program will lead to a forest with more hardwood and less conifer.

Harvest was well below target levels due to the permanent closure of the Kenora paper mill and the protracted idling of Kenora Forest Products. This shortfall was also related to AbitibiBowater no longer sourcing wood from the Whiskey Jack Forest for its mill in Fort Frances. Objectives for sustained wood supply and forest resource use commercial (i.e. Weyerhaeuser) will not be met.

A significant shortfall in harvest area was experienced over all three terms reported in the Trend Analysis, with a cumulative total shortfall of 45,000 ha by 2009. This was offset to some extent by natural depletions due to blowdown and jack pine budworm, although the nature of the forest resulting from these events is different than the forest that results from clearcut harvesting and associated silviculture.

While total renewal area significantly exceeded harvest area over the past three terms, more recent forest composition, pattern and structure targets may not be met due to low harvest exacerbated principally by a lack of tending. This is illustrated in the Trend Analysis data which shows a 30% increase in poplar working group and a 46% decline in spruce working group over the last 15 years. There is also concern with meeting the soil quality objective on fine textured sites due to multiple entries, although rutting and other forms of site damage were observed to be minimal. Discussion on the achievement of the full set of management objectives is contained in Appendix 2. The objectives for the 2004-2024 FMP were carried forward into the Contingency Plan; therefore certain objectives will similarly not be met if current trends continue.

Trend Analysis Report

ACCC prepared a draft Comparison and Trend Analysis Report (TAR) covering fifteen years of operations (1994-2009) on the Whiskey Jack Forest. The audit team reviewed the draft according to the procedure in the IFAPP and identified the need for changes, following which a final TAR was resubmitted by ACCC. The TAR included as Appendix 7 to the audit report is the correct and complete report. The period covered by the analysis encompasses four separate FMPs: one each for the Pakwash Forest and Patricia Forest and two for the amalgamated Pakwash and Patricia Forests (i.e. the Whiskey Jack Forest). During this time frame there was an 8% reduction in the production forest landbase due principally to withdrawals for parks and protected areas. There was a notable shift in the composition of the tree cover with a large increase in jack pine and poplar working groups and correspondingly large decrease in

spruce working group. Harvest area averaged 53% of planned resulting in a cumulative total of approximately 45,000 ha of available harvest area remaining uncut by the end of the fifteen years. Utilization of the available poplar fibre resource increased significantly with the opening of the Weyerhaeuser strand lumber mill in Kenora whereas the available jack pine and spruce were significantly underutilized during the last five years due to recent mill closures and changes in fibre sourcing policies, as previously mentioned.

Large natural disturbance events (principally jack pine budworm infestation) resulted in a reported depletion of some 218,000 ha or 27% of the forested landbase, approximately 90% having occurred in the 2004-2009 FMP period. Total renewal area significantly exceeded total harvest area due to the overall shortfall in actual versus planned harvest area. There was a recent shift to a greater reliance on natural regeneration and a very steep decline in chemical tending, with resulting issues as previously discussed. Some 87% of the area harvested during the five years from 1994-1999 were declared FTG with most of the balance expected to meet the minimum regeneration standards in the near future. The reader should understand that areas meeting the minimum regeneration standards are not necessarily regenerating to the planned forest unit. For example, the Year 10 AR for the 2004-2009 period reports approximately 76% of the area declared FTG was regenerating to the planned forest unit.

Forest Sustainability

Forest sustainability (i.e. achieving plan objectives and the long term management direction set for the forest in the FMP) was not well-supported by the silviculture program. Corrective measures will need to be taken at both the plan level and at the operations level to reset the course towards what is thought to be the historic condition of a spruce dominated forest condition if that is the intent, or the plan adjusted to reflect the fact that a higher component of hardwood can be expected with continuation of the current silviculture program.

To a great extent, management of the Forest was significantly complicated by external social and economic factors. The protest by GNFN over forestry practices, including herbicide spraying, was a key factor influencing decisions not to spray herbicide on the Forest. Some 25,000 m^3 of wood was already stranded on the Forest as a result of an ongoing road blockade by GNFN. As the downturn in the forest industry took hold, harvesting on the Forest also began to decline. As a consequence, the balance in the Forest Renewal Trust fund account declined and forest managers began to rely more heavily on lower cost renewal treatment approaches.

Specific planning and operational issues associated with the silviculture program that underlie the problem are summarized below.

- The natural benchmark does not reflect plan intentions to develop a natural forest composition
- The selected management alternative moves the forest further from the natural benchmark
- The planned silviculture program does not meet the selected management alternative with respect to treatment intensities
- Silviculture inputs exceed the silvicultural ground rule standards in some cases
- Actual silviculture implemented is not meeting silvicultural ground rules
  - Stocking below target
  - Conifer composition below target
  - Loss of infrequent species (i.e. white spruce, red pine, white pine)
- Under-estimates of hardwood composition during free-to-grow surveys delays full detection of forest change until the next forest resource inventory is completed

Combined, these factors have led to a steady erosion of a conifer-dominated forest condition to one with significantly more mixed woods at reduced stocking. Forest sustainability, as assessed through the Independent Forest Audit Process and Protocol will not be achieved unless corrective measures are immediately taken.

4.8 Contractual Obligations

Appendix 3 summarizes the individual conditions arising from the SFL and provides the audit team's assessment of the extent to which each licence condition was met. Most conditions were met or partially met. Conditions not met were associated with maintenance of the Forestry Futures Trust minimum balance, the achievement of silviculture standards, and the timely completion and submission of IFA action plans and status reports.

Recommendation 21: The MNR Kenora District Manager and the Forest Manager must ensure that the audit action plan and status report comply with all IFAPP submission requirements.

As part of the review of contractual obligations, the audit team is required to assess the effectiveness of actions developed by the auditees to address the recommendations arising from the previous IFA. It was apparent from documentation, interviews and field observations that work had been undertaken on the 2004 IFA action plan and, according to the latest draft of the action plan available during the audit, virtually all of the audit recommendations were actioned. The audit team reviewed these actions and concluded that most audit recommendations were appropriately dealt with. However, the audit team disagreed with the status of "complete" for Recommendation 8 (silviculture strategies), Recommendation 10 (site disturbance), and Recommendation 11 (vegetation control program), as reported in the draft action plan, because the actions or their implementation have not adequately addressed the original issue. The audit team's concerns are captured in the associated discussion and recommendations contained in this audit report.

A final audit action plan, dated March 2010, was provided to the audit team. The deadline date for completion of actions associated with Recommendation 11 is now "ongoing". This change does not alter the audit team's view that the original concern identified in the 2004 IFA has not been adequately addressed.

Errors in text and tables and a lack of adequate discussion of issues and trends were found in the Annual Reports. The audit team does not believe the low cost approach to the silviculture program was always a wise or effective use of money from the Renewal Trust Fund, as evidenced by the often poor regeneration results on the ground compared to the expectations set out in the FMP.

The SFL holder worked for more than a year to secure a surrender agreement. Some of the delays were related to assessing liability for silviculture. The surrender agreement was signed outside of the audit period. However, the process behind securing the surrender agreement is material to the audit under the principle of contractual obligations.

The audit team believes that the process took longer than it should have. The issue of silviculture liability should not have been a stumbling block. The records should be up to date and MNR should move quickly to ensure the harvest and renewal programs proceed under a direct delivery model, a forest management contract or a new licence. Funds to complete forest renewal should be sufficient if the minimum balance has been maintained. Since more SFLs may be surrendered in the future, corporate MNR should undertake measures to allow for expedient surrenders of licences and interim measures to deliver the forest management program until such time as a new SFL is issued.

4.9 Conclusions and Licence Extension Recommendation

The audit team concluded that, with the following critical exception noted below, management of the Whiskey Jack Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and MNR met its legal obligations. Forest sustainability, as assessed through the Independent Forest Audit Process and Protocol, will not be achieved unless corrective measures are immediately taken to address the issues that silviculture practices, including a lack of tending of artificially regenerated areas, are leading to reduced stocking of conifer and an

increased component of hardwood on the Forest. This trend does not support the management intention of maintaining a conifer dominated forest, as set out in the 2004-2024 Whiskey Jack Forest FMP.

- Recommendation 3 of this audit must be satisfied to bring the Whiskey Jack Forest into general compliance.

ACCC has surrendered the SFL for the Whiskey Jack Forest to the Crown; therefore the audit team makes no recommendation on licence extension.

Appendix 1 - Recommendations

Independent Forest Audit – Record of Finding Recommendation 1
Principle: 2. Public Consultation and Aboriginal Involvement **Criterion:** 2.1 Local Citizens Committee establishment and Terms of Reference **Procedure:** 2.1.1.1 Review the terms of reference and LCC minutes, compared to the applicable FMPM requirements.
Background Information and Summary of Evidence: The current Terms of Reference for the Kenora LCC and the Red Lake LCC do not contain a protocol describing the presence of or functioning of the two LCCs on the Whiskey Jack Forest.
Discussion: The 2004 FMPM Sections 3.2.3 and 3.2.4 requires that the LCC terms of reference contain a protocol which describes how multiple committees on a forest will function. There are two LCCs with responsibilities on the Whiskey Jack Forest (Kenora LCC and Red Lake LCC).
Conclusion: The Terms of Reference for both the Kenora LCC and Red Lake LCC do not meet the requirement of the FMPM with respect to a protocol for multiple committees.
Recommendation 1: MNR Kenora District and MNR Red Lake District must ensure that the LCC Terms of Reference for the Kenora and Red Lake LCCs meet the content requirements of the FMPM regarding a protocol for the functioning of multiple LCCs.

Independent Forest Audit – Record of Finding
Recommendation 2

Principle: 3. Forest Management Planning

Criterion: 3.5.4 FMP silviculture ground rules

Procedure: 3.5.4.1 Assess whether treatments for harvest, renewal and tending activities and regeneration standards appropriately reflect the selected management alternative/management strategy.

Background Information and Summary of Evidence: There were 45 Silviculture Ground Rules (SGRs) developed for the 2004-2024 FMP, which followed the requirements of the 1996 FMPM. These exact SGRs were used in the 2009-2012 Contingency Plan as stipulated by the approved Contingency Plan proposal. The SGRs are a relatively good representation of what is on the Forest but significant issues were found regarding specific components of some SGRs:

- Over-estimation of expected amounts of future conifer in some extensive SGRs, e.g. Mixed-E = 50%, PRW-E = 80%, SPDom-E = 80%.
- Acceptable species lists sometimes exclude important species such as red and white pine and white spruce.
- Some acceptable species lists include values that do not meet the intended future forest condition, e.g. PjDom-E has Pj>=50% when PjDom forest unit requires Pj>=60%.
- Unrealistic future forest condition in some cases, e.g. PjDom-SpDom with future forest condition that contains only 10% Pj.
- No allowance for cleaning treatments in PjDom-B or SPDom-B. If these SGRS are to have no more than 10% hardwood species at maturity some form of cleaning would be required on most sites.

Other, less significant issues found with the SGRs are also summarizedt to aid in the development of the next SGRs:

- Use of shelter cones is described for jack pine and black spruce seeding in some SGRs. This technique has not been used on the Forest in several years.
- Regeneration standards should be reviewed. SpLow-E has 60 cm height for black spruce at 15 years – this is extremely slow growth. Minimum average height is given for all species in some SGRs. This should be identified by species or, at the least, by conifer and hardwood.
- A few SGRs had both scarification and mechanical site preparation – this should not occur.

Discussion: Over-estimation of expected future conifer and under-estimate hardwood in affected SGRs can negatively impact future forest condition if not corrected. Predicting unrealistic future forest conditions and limiting treatment options could also have long term implications.

Regeneration and silviculture survey information available for the Forest corroborates most of the silviculture planning and implementation findings presented in this audit report. To date, the survey information has not been fully utilized when developing forest management plans.

Conclusion: Silviculture survey information must be analyzed and used by the planning team when developing the silviculture program for the next FMP. This will ensure the development of a management alternative that can meet plan objectives and develop a desirable future forest condition.

The recommendation below has been purposely expanded beyond the SGRs to include the entire silviculture program because it was found that several components of silviculture planning are in need of revision based on available information. Other silviculture planning issues are discussed elsewhere in this report.

Recommendation 2: The Forest Manager must ensure that available survey information (regeneration surveys, Free-to-Grow, silviculture effectiveness monitoring, etc.) is used in the development of the silviculture program in the next FMP.

Independent Forest Audit – Record of Finding
Recommendation 3

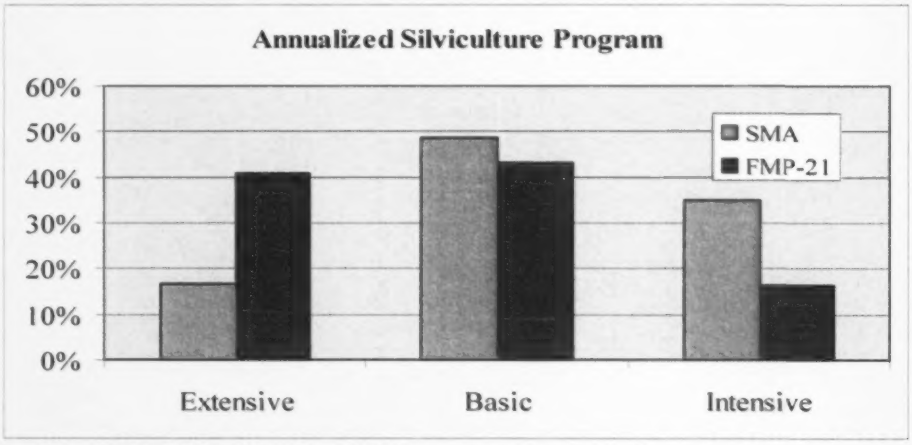
Principle: 3. Forest Management Planning

Criterion: 3.5.7 FMP renewal, tending, protection and renewal support

Procedure: 3.5.7.1 Assess planned implementation of the selected management alternative/management strategy.

Background Information and Summary of Evidence: The work to associate strategic to operational silviculture and the required discussion was deficient in the 1999-2004 Whiskey Jack Forest FMP and a recommendation was provided in the 1999-2004 IFA to remedy this (#8). Unfortunately, the 1999-2004 IFA recommendations were not available for the development of the 2004-2024 FMP and the Contingency Plan subsequently developed for the 2009-2012 term used the strategic direction from the 2004-2024 FMP, so actions on this recommendation have not yet occurred. This is evident because similar, if not greater, discrepancies with regards to the modeled and planned silviculture program are found in the 2004-2024 FMP and the 2009-2012 Contingency Plan; these are summarized below.

The figure below indicates considerable differences between the annualized modeled silviculture program by intensity (selected management alternative = SMA) and the planned program (FMP-21 from the 2009-2012 Contingency Plan).



Comparison of Modeled and Planned Silviculture Program by Intensity.

Table FMP-16 summarizes forest unit transitions expected to occur on the planned harvest area when the modeled silviculture program is followed. This table is limited to activities or changes predicted for the plan term (five years) but trends can be compared to the SMA to ensure consistency. Table FMP-16 in the 2004-2024 FMP (and the 2009-2012 Contingency Plan, which uses the strategic direction from the 2004-2024 FMP), indicates an increase in Mixed, PRW and PoDom forest units and a decrease of all the other forest units. These trends are similar to the SMA in the plans, but the magnitude of change is significantly different. In the five years of transition shown in Table FMP-16, the Mixed forest unit is to increase by 23.5% and SpDom is to decrease by 6%.

Another discrepancy found with regards to silviculture was between stocking rates in yield curves and stocking rates in Silviculture Ground Rules (SGRs). Stocking in yield curves was found to exceed target stocking in all SGRs. For example, PjDom-I yield curve has 100% stocking whereas the PjDom-I SGR only requires >=90%.

Planning for tending (release from vegetative competition) was also an issue in the 2004-2024 FMP and 2009-2012 Contingency Plan. Although there is no specific model input for tending, yield curves (predicted species composition, stocking and volumes), forest unit transitions and silviculture costing are developed based on the assumption of removing competing vegetation on most areas treated by planting or seeding (e.g. Intensive and Basic treatments). Therefore, it is usual to plan for competition control on all areas planned for Intensive

treatments and a large portion of those planned as Basic.

In the 2004-2024 FMP about 63% of silviculture treatment area was planned for planting and seeding (generally correlates to Intensive and Basic treatment intensities respectively). Of this area, less than half (~47%) was planned for tending. In the 2009-2012 Contingency Plan the proportion of artificial treatments planned decreased to ~59% of which just over one-quarter (~27%) was planned to be tended.

Discussion: Silviculture in a forest management plan may be broadly separated into the modeled and planned programs.

- The modeled or 'strategic' silviculture program links expected silviculture treatments and associated average yield curves by intensity. The strategic silviculture program is developed to meet related plan objectives and ultimately derive preferred future forest conditions – it is usually desired to move towards a historic/natural forest condition, normally defined in northern Ontario as one dominated by pure or mixed conifer stands.
- The planned or 'operational' silviculture program focuses on actual silviculture treatments by area based on those areas not yet treated or requiring re-treatment from the current/previous plan(s) and those planned for treatment in the upcoming plan term.

Although the modeled and planned silviculture programs are somewhat different, the two should be solidly linked to allow fulfillment of associated plan objectives through plan implementation. Furthermore, the connection between strategic and operational should be clearly discussed in forest management plans to provide confirmation that what is planned in the FMP can meet plan objectives and, in time, the preferred future forest condition.

To meet plan objectives, the SMA calls for a significantly larger proportion of intensive and basic treatments when compared to the planned program (Figure above). Exact correlation between these values is not expected but solid association is. No discussion is provided in the FMP for this discrepancy. Also, the very large percent changes by forest unit over short periods shown in Table FMP-16 are not consistent with the SMA and this is not discussed in the text of the FMP.

Over a large area, the reduction of volume based on 10% less stocking in SGRs versus the yield curves would be considerable. Furthermore, survey results indicate that only a small portion of Intensive treatments actually meet the 90% stocking requirement; the need for better inclusion of survey data is included with the SGR discussion with the previous recommendation.

The decreasing reliance on artificial treatments and tending is not in alignment with the selected management alternative, is not supported by results of actual treatments on the Forest and will not lead to objective achievement or producing the desired future forest condition. The need for tending is discussed in several other sections in this audit.

Conclusion: As noted earlier, the 1999-2004 IFA included a recommendation focused on improving silviculture planning but actions for this recommendation have not yet occurred due to timing of FMP development/need for a Contingency Plan. Several issues were also found regarding silviculture planning in the 2004-2024 and 2009-2012 FMPs. To ensure this important work occurs in the next FMP, a recommendation similar to the one in the 1999-2004 IFA is included in this audit.

The next FMP will be a significant improvement over its predecessors with the proper incorporation of field survey data (based on the previous recommendation) and through developing and detailing clear connections between strategic and operational silviculture (as a result of the recommendation below).

Recommendation 3: The Forest Manager must ensure that:

a) the Silviculture Ground Rules, silviculture exceptions, planned renewal program and actual silvicultural intentions of the next forest management plan support the long term management direction and related silvicultural strategies,

b) the connection between strategic and operational silviculture is clearly discussed in the text of the next plan, and

c) the operational renewal program aligns with the planned renewal program and supports the long term management direction.

Independent Forest Audit – Record of Finding **Recommendation 4**
Principle: 3. Forest Management Planning; 4. Plan Implementation; 7. Achievement of Management Objectives; 8. Contractual Obligations **Criterion:** 3.7. Contingency Plan; 4.1 Plan Assessment; 7.2 Assessment of Objective Achievement; 8.1.2 Wood Supply Commitments **Procedures:** 3.7.2 Assess whether the planning procedures used for the contingency plan followed the requirement 3.7.3 Assess whether the rationale for the contingency plan was appropriate in the circumstances 4.1.1 Modeling assumptions 7.2.2 Assessment of the progress towards achieving each objective 8.1.2.1 Determine whether wood supply commitments and any special conditions have been complied with
Background Information and Summary of Evidence: The audit team inspected approximately 3,000 ha of area treated in June 2007 by aerial application of a biological pesticide (Btk) to control an outbreak of jack pine budworm. The 2008-09 Annual Report notes that the spray was successful so no further work was required. There was no visible distinction between treated and untreated forest observed by the audit team by air but such an assessment may be premature at this time. The pest management proposals for 2006 and 2007 were reviewed and found to have met the FMPM requirements in terms of content. The documents were complete and well written; however, the evaluation of options lacked rigour and meaninoful quantitative analysis.
Discussion: The treated area viewed by the audit team encompassed a marten core that is deferred from harvest to maintain marten habitat and large areas of "interior" old forest. Older boreal forest cover types, especially jack pine, serve ecological functions through the mortality of the pine overstory. As the dominant trees die they provide habitat structure for marten and other species. The value of trying to "preserve" the jack pine in marten core areas is questionable. MNR representatives suggest that the main reason this strategy was pursued was to reduce the risk of catastrophic fire and this may indeed have a favourable benefit-cost ratio but the supporting analysis is limited.
Conclusion: The pest management proposals for 2006 and 2007 were reviewed and found to have met FMPM requirements in terms of content. The documents were complete and well written. The required management options such as no treatment, modified harvest strategies and insecticide applications were evaluated by the program planning team. However; the evaluation of options lacked rigour and was supported by a minimal level of quantitative analysis. It appears that the decision to spray the biological pesticide Btk was made and the pest management proposal was then drafted to meet the FMPM requirements rather than giving serious consideration to other management options. Several planning team members confirmed that, in hindsight, this was indeed the case but it was necessary to quickly respond to the outbreak. There were also issues in assembling the data at the regional scale to complete a detailed analysis of options. If the program is to continue, a more rigorous cost-benefit analysis should be completed. Future outbreaks will surely occur and MNR should prepare for this event by, at the very least, preparing input files for regional level analyses.
Recommendation 4: MNR Region must develop the capacity to conduct risk based cost benefit analyses of proposed pest management programs in advance of future outbreaks.

Independent Forest Audit – Record of Finding **Recommendation 5**
Principle: 4. Plan Assessment and Implementation **Criterion:** 4.1 Plan assessment **Procedure:** 4.1.1 Assess whether the FMP was appropriate in the circumstance
Background Information and Summary of Evidence: A number of objectives in the 2004-2024 FMP and 2009-2012 Contingency Plan had targets based on the 'natural bounds of variation'. The natural bounds of variation were derived from +/-20% of the highest and lowest points of the Natural Benchmark (NB). The issue with this is that the benchmark starts at the current condition that had over-representation of mixed wood and jack pine stands and under-representation of spruce. In addition, the objective targets were not linked to the trend line of the NB. The Natural Benchmark developed for the plan deviated in several ways from the stated natural condition and one of the FMP targets (pg. 81) "...move toward area by forest unit as represented by previous forest inventories..."
Discussion: The bounds of natural variation were exaggerated, i.e. the lower bound for spruce was likely lower than natural while the upper bounds for jack pine and mixed wood were higher than normal. Thus, the target of staying within the natural bounds could be met while the management strategy moves away from the NB. For example, the NB indicates a slow steady rise of jack pine into the future but the selected management strategy decreases slightly through time. Instead of reducing the current over-representation of mixed wood and jack pine stands, the NB maintains/increases these types and spruce decreases. It is mentioned in the FMP that the relatively short fire cycle determined for the Whiskey Jack Forest favoured jack pine over black spruce. The fire cycle should have been altered to allow development of an appropriate NB.
Conclusion: The bounds of variation used were exaggerated for select forest units and were not appropriate for use in objective target setting. The natural benchmark developed for the 2004-2024 FMP and 2009-2012 Contingency Plan does not reflect the development of a natural forest.
Recommendation 5: The Forest Manager must ensure that, if required, the Natural Benchmark (or equivalent) developed for the next FMP better reflects actual conditions and that, if required, targets/desired levels (or equivalent) for appropriate objectives in the next FMP include consideration for the Natural Benchmark trend line.

Independent Forest Audit – Record of Finding **Recommendation 6**
Principle: 4. Plan Assessment and Implementation **Criterion:** 4.3 Harvest **Procedure:** 4.3.1 Assess in the field the implementation of approved harvest operations
Background Information and Summary of Evidence: The 2004-2009 FMP included moose as one of the featured species on the Whiskey Jack Forest. The plan further outlines how moose habitat would be considered in the layout of cutblocks including "... irregularly, shaped and sized cuts with scattered shelter patches..." Wildlife habitat objectives include an objective for moose habitat which identifies a shelter patch strategy: "Where harvest blocks exceed 100 ha and the 'edge of cover' to 'edge of cover' distance potentially exceeds 400 m, suitable shelter patches will be retained within the harvest block." During the field audit, a number of harvest blocks were visited that were to include moose shelter. In four cases, moose shelter patches had been harvested and had not been left as required.
Discussion: The discussion provided in the FMP clearly explains the reason for including moose shelter patches. Maps included in the auditor field binders illustrated the desired location of the shelter patches but harvest operations did not abide by the plan.
Recommendation 6: The Forest Manager must ensure that moose shelter patches are retained as specified in the FMP.

Independent Forest Audit – Record of Finding **Recommendation 7**
Principle: 4. Plan Assessment and Implementation **Criterion:** 4.3 Harvest **Procedure:** 4.3.1 Assess in the field the implementation of approved harvest operations
Background Information and Summary of Evidence: Site disturbance in the form of rutting was identified as an issue in the 1999-2004 IFA. This problem has been completely eliminated on all sites examined during this audit. However, a number of sites viewed showed signs of compaction of fine textured soils (e.g. reduced regeneration of trees along machine routes) that is contributing to decreased stocking.
Discussion: The fine textured soils common to portions of the Forest are vulnerable to compaction and many sites showed evidence of this type of damage. Based on records and interviews many of these sites were supposedly harvested during the winter period to reduce site disturbance but there are very obvious areas where trees are not regenerating naturally, due to compaction of soils by equipment.
Conclusion: These sites cannot be operated upon during wet or non-frozen periods.
Recommendation 7: The Forest Manager must ensure that operators refine their work methods on fine textured soils to avoid operating during wet or non-frozen periods.

Independent Forest Audit – Record of Finding **Recommendation 8**
Principle: 4. Plan Assessment and Implementation **Criterion:** 4.1 Plan assessment **Procedure:** 4.1.1 Assess whether the FMP was appropriate in the circumstances.
Background Information and Summary of Evidence: The inventory update for the 2009-2012 Contingency Plan was relatively good but FTG record updating completed during the audit term was not always accurate. FTG information in the inventory was compared to actual field visits during the audit. Some large discrepancies were noted. For example, some areas dominated by jack pine with a small spruce component were recorded in the inventory as spruce stands with a small component of pine; the opposite was also found.
Discussion: Small and infrequent discrepancies are common when reviewing Forest Resource Inventory (FRI) attributes, but absolute disagreement of working group should rarely occur. In the 10% sample taken by the audit team, there were several instances of absolute disagreement of working group. Therefore, the quantity and significance of discrepancies noted by the audit team in the sample reviewed suggests a systematic issue with data input and is not categorized as an occasional typographical error. The monitoring section contains a full account of the silviculture monitoring program including FTG assessed during the term.
Conclusion: In preparation for the next FMP, FTG records must be accurately brought into the inventory.
Recommendation 8: The Forest Manager must ensure that the inventory is reviewed and verified for accuracy with respect to Free to Grow records updated during the audit term.

Independent Forest Audit – Record of Finding **Recommendation 9**
Principle: 4. Plan Assessment and Implementation **Criterion:** 4.4 Renewal **Procedure:** 4.4.1 Effectiveness of renewal prescriptions
Background Information and Summary of Evidence: Site preparation was under-achieved during the audit term - about 7,800 ha of 15,922 ha planned was completed (~50%). All site preparation during the term was completed by a single contractor using a trencher. Site preparation viewed at almost every site visited was often too light and spacing was too wide between passes. MNR SEM assessments mirror the audit findings.
Discussion: Light, wide site preparation led to reduced planting spots on most sites. Fill planting will be required to ensure stocking/density levels can be met on many of these sites.
Conclusion: Site preparation must be monitored to ensure an adequate number of quality planting spots are created.
Recommendation 9: The Forest Manager must ensure that site preparation results in the production of planting spots of the quality and quantity appropriate to meet plan objectives.

Independent Forest Audit – Record of Finding **Recommendation 10**
Principle: 4 Plan Assessment and Implementation **Criterion:** 4.4 Renewal **Procedure:** 4.4.1 Effectiveness of renewal prescriptions
Background Information and Summary of Evidence: It was noted from Annual Reports that few white spruce, red pine or white pine were planted during the term (11,900, 5,500 and zero, respectively).
Discussion: Several sites audited had a significant pre-harvest white spruce component and at least one site had red pine but these species were not included in the renewal of these areas. Based on the number of seedlings of these species (see above), approximately 15 to 20 ha would have been planted during the audit term (assumes a 20-30% mix of these species rather than pure planting) – this area(s) was not included in the audit sample. According to the 2008-09 AR (final AR for the 2004-2024 FMP), during the audit term 1,324 m^3 of Pr and 110 m^3 of Pw was harvested as well as an undisclosed amount of Sw (planned Sw was 8% of all spruce volume but actual spruce volume harvested was supposedly only ~ 527 ha of Sb although there was evidence of Sw harvest at several audit sites). Based on a conservative value of 5% of the spruce harvested during the term being Sw, plus the Pr and Pw harvest values above, approximately 220-500 ha should have been planted with a mix of Pr, Pw or Sw during the 2004-09 period just to maintain these species on the landscape.
Conclusion: The plan target to enhance red and white pine on the Forest will not be met unless treatments include these species on appropriate sites.
Recommendation 10: The Forest Manager must ensure that planting of red and white pine occurs on appropriate sites.

Independent Forest Audit – Record of Finding **Recommendation 11**
Principle: 4. Plan Assessment and Implementation **Criterion:** 4.4 Renewal **Procedure:** 4.4.1 effectiveness of renewal prescriptions
Background Information and Summary of Evidence: Slash management during the audit term was variable. At the beginning of the audit term effort was made to pile and burn slash. Despite annual reporting that suggests an effective burning program during these years, slash piles were often left unburned or partially burned. The company ceased the slash management program from 2007 to 2009 - slash was left unpiled and unburned along roadsides.
Discussion: Recommendations have been provided in at least the two previous audits to improve slash management. Slash management has been, and continues to be, an issue on the Forest.
Conclusion: If left untreated, piled or unpiled slash will effectively remove large areas of productive land from the land base, likely for decades.
Recommendation 11: MNR Kenora District must ensure that all blocks harvested during the audit term are reviewed for slash management and, where established regeneration will not be affected **a) slash be piled and burned or otherwise removed to allow regeneration of productive land, or** **b) if natural regeneration of these areas is not expected, then treat the area to ensure regeneration.**

Independent Forest Audit – Record of Finding
Recommendation 12

Principle: 4. Plan Assessment and Implementation

Criterion: 4.4 Renewal; 4.5 Tending and Protection

Procedure: 4.4.1 effectiveness of renewal prescriptions
4.5.1 gaps between the planned and actual levels of each type of tending

Background Information and Summary of Evidence: Due to the under-achievement of site preparation, a large component of the planting program was direct plant (i.e. planted without site preparation). As noted, site preparation was often too light and widely spaced to provide the requisite number of planting spots but planting viewed on prepared areas was generally well done with good choice of micro-site. However, wide spacing and missed areas was common on most areas that were direct planted.

A review of planting density from the ARs indicates a pronounced reduction of seedlings per hectare during the audit term – average densities started at just over 2,000 seedlings/ha in 2004-05 and decreased to 1,334 seedlings/ha by 2008-09.

Seeding occurred on 2,100 ha of 7,780 ha planned (~27%). Many of the sites scheduled for seeding were planted instead. This was noted as appropriate during the field review since many of these sites were too competitive for seeding. However, other areas currently scheduled for planting could be effectively site prepared and seeded. Many areas that were seeded were not well stocked and may not meet targeted stocking rates.

No chemical, mechanical or manual plantation cleaning occurred during the audit term even though 8,737 ha were planned. This was confirmed by the field audit that included many sites that had heavy shrub or hardwood tree competition of planted and natural conifer trees. Some older areas deemed FTG also had hardwood competition.

According to silviculture monitoring completed during the audit term, about 22,000 ha of older disturbed area requires competition control in order to meet regeneration standards.

Discussion: Direct planting is a viable option on many sites but must be closely monitored to ensure plan objectives can be met.

Seedling densities were apparently reduced to account for natural ingress; however, the reliability of ingress was not demonstrated in silviculture monitoring results and was not witnessed during the audit. Ingress was sparse on many of the sites viewed and was generally limited to jack pine on shallow soiled/rocky upland patches and black spruce on some lowland sites. Otherwise, shrubs, hardwood species and occasional balsam fir occupied large portions of many sites.

The audit team believes that under-stocking of seeded areas is mainly a result of low germination due to light and wide site preparation. Seed germination potential, timing, and rate of application of seed were not deemed to be cause for the low germination.

The lack of cleaning, particularly on areas planted and seeded, is considered by the audit team to be a crucial finding. Many sites viewed require some form of competition control to meet plan objectives.

The company confirmed the extent of the issue in the 2007-08 AR:

> *The limited tending on the forest may impede achievement of the forecasted forest condition described in the FMP. The inability to economically provide opportunity for optimum tree growth, could over time change the species composition of the Forest by faster growing (poplar, white birch) becoming more frequent and slower growing, shade intolerant species (jack pine, spruce) becoming less frequent on the Forest. This change will impact the local forest users dramatically. Similarly, recent renewal efforts may not result in expected results due to lack of tending operations, generating an increase in areas declared not sufficiently reforested.*

Inadequate tending was an issue raised during the previous two audits and is considered the most significant issue on the Forest in this audit. Interestingly, the tending issue on the Forest has changed from one of a perceived or real over-application of herbicide in the past to the outright abandonment of the program. In the 1994-99 IFA, issues were raised prior to and during the audit concerning the pre-disposition to conifer renewal by the company in situations where pre-harvest hardwood was a large component of the sites. A concern was the significant reduction in the poplar component where block application of aerial herbicide could not easily avoid poplar concentrations. The 1994-99 IFA audit team expressed concern whether some spraying was in fact necessary and whether each candidate spray block received sufficient inspection one year in advance of planned treatment. The auditors recommended that a thorough field assessment of candidate spray blocks occur to ensure prudent use of herbicide.

Spray assessment records and correspondence between Abitibi and MNR reviewed for the 1999-2004 IFA indicated that there were still significant problems with the spray program at the time, particularly early in the 1999-2004 term. Problems included variability in determination of areas requiring tending, areas where the treatment failed and areas being sprayed or re-sprayed that were already free-growing. These problems appear to have caused a lack of confidence by MNR that Abitibi was applying herbicide judiciously. As a result, proposed tending treatments were suspended while MNR and Abitibi representatives jointly enhanced the survey methodology.

Even though the new survey methodology was amended to the 1999-2004 Whiskey Jack Forest FMP in early 2001, the planned tending program was suspended fully by MNR for two years and partially in one year of the five-year term. In addition, Abitibi chose to suspend the vegetation control program in the final year of that audit term while discussions were taking place with Grassy Narrows First Nation, a community that is generally against the use of herbicides.

Because several artificial renewal sites on the Whiskey Jack Forest were in need of tending at the time to meet plan objectives, the audit team for the 1999-2004 IFA recommended that Abitibi implement an approved vegetation control program. As noted, no vegetation control program occurred during the 2004-09 term. Document review suggests that the company considered replacing aerial spray with ground spray for several candidate vegetation management sites; however, ground spray was subsequently also abandoned. Documents also reveal that the company has chosen not to spray in order to avoid the anticipated political backlash from Grassy Narrows First Nation.

Some older FTG areas viewed during the audit were vigorous and composed of almost pure conifer. These areas demonstrate the capacity of the Forest under an effective competition control regime and are the model for the Desired Future Forest Condition as described in the FMPs.

Conclusion: There will be a need for fill planting on most sites planted during the audit term to meet plan objectives. Many areas seeded during the audit term will require fill plant/re-seeding to meet plan objectives. In the absence of a competition control program, the Desired Future Forest Condition described in the 2004-2024 FMP and the 2009-2012 Contingency Plan will not be achieved. Site preparing, planting and seeding of areas without effective competition control is also viewed as a loss of value. The combined effort of tending requisite areas renewed during the audit term and older stands to achieve FTG status will be considerable.

Recommendation 12: MNR Kenora District must ensure that:

a) a review is conducted of all areas planted and seeded during the audit term and that fill planting or re-seeding occurs as necessary to support the achievement of FMP objectives,

b) a review of all sites harvested during the audit term that are forecast to become conifer-leading forest units is conducted, and that tending occurs where necessary so that plan objectives can be met.

Independent Forest Audit – Record of Finding
Recommendation 13

Principle: 4. Plan Assessment and Implementation

Criterion: 4.6 Renewal support

Procedure: 4.6.2 Assess whether actual tree seed collection and nursery stock production is appropriate for the site conditions encountered on the management unit.

Background Information and Summary of Evidence: Seed storage was reviewed during the audit. At the time of the audit two of three jack pine seed lots stored will not meet the annual requirements noted in the 2009-2012 Contingency Plan – there is actually no jack pine seed for seed zone 11. The following table indicates amount of jack pine (Pj) seed stored (X 000,000) versus the need according to the Contingency Plan. Orange indicates less than one year of seed available and yellow indicates less than two years.

seedzone	Pj stored	Pj need CFMP	Years seed CFMP
9	50	50	1
10	11.4	14	0.8
11	0	7	0

If average usage from the 2004-09 term is used as a gauge of future need, only one seed lot of each species is deficient for annual requirements (Pj seed zone 11).

Discussion: Recent diminished harvest levels will reduce the need for seed but renewal support needs to be planned and available for full utilization. In addition, remedial work needed as a result of this audit will increase the demand for seed.

Conclusion: There should be at least a few years worth of seed stored for each species/seed zone combination on the Forest.

Recommendation 13: The Forest Manager must ensure that seed collection and storage meet the needs of the renewal program.

Independent Forest Audit – Record of Finding **Recommendation 14**
Principle: 4. Plan Assessment and Implementation **Criterion:** 4.4 Renewal **Procedure:** 4.4.1 Consider whether there are any gaps between the planned and actual levels of each type of renewal activity seen in the field.
Background Information and Summary of Evidence: New FOPs were selected for many stands during the audit term. For example, direct planting and no tending options were often chosen over more intensive prescriptions. It appears that reducing silviculture cost, rather than modifying operations according to actual field conditions, was the main reason for changing from preferred to alternate prescriptions in many cases. The cycle of silviculture cost reduction started with selecting less intensive/costly options to implement in the field, building a surplus in the Forest Renewal Trust Fund (FRTF) and then using the surplus as evidence in the request to reduce contribution rates. Through requests by the company, the FRTF contribution rate for spruce, pine and fir was reduced from $6.00 per cubic meter in 2005-06 to $5.00 in 2006-07 and to $3.00 in 2008-09.
Discussion: In spite of MNR Area Forester analyses and silviculture effectiveness monitoring that indicated significant issues with the silviculture program, as well as FTG results that showed that regeneration standards were often not being met; MNR granted the renewal rate reductions. In addition, declining contributions (mainly through reduced harvest levels) led to the FRTF minimum balance not being maintained, as required.
Conclusion: Plan objectives and the desired future forest condition on many sites will not be achieved with the options chosen, particularly in light of the operational issues and reduced funding noted. Adequate renewal funding is needed to ensure plan objectives can be met. Additional funding will also be needed to fulfill actions for several recommendations in this audit report.
Recommendation 14: MNR Kenora District must review the Forest Renewal Trust Fund rates particularly for spruce/pine/fir and assign rates appropriate for meeting plan objectives.

Independent Forest Audit – Record of Finding
Recommendation 15

Principle: 4. Plan Assessment and Implementation

Criterion: 4.7 Access

Procedure: 4.7.1 Assess whether roads have been constructed, maintained, and decommissioned to minimize environmental impacts and provide for public and operator safety.

Background Information and Summary of Evidence: During the field portion of the audit, several harvest blocks were viewed where road rehabilitation should have occurred. For example, Block 4.721 and Block 4.760 had roads that would serve no further purpose and rehabilitation would reduce loss of productive area. Although Block 4.760 also had excessive road building, this was the only instance of this found on the audit.

Example of an excessively roaded area that should have been rehabilitated.

Discussion: Road rehabilitation can provide a means to effectively return land to the productive land base as well as eliminate unnecessary and disproportionate loss of productive land where excessive road building has occurred. Where roads will serve no further purpose, be it for forest management or other uses, strategies to rehabilitate roads can result in returning roaded areas to the productive landbase.

Conclusion: Where excessive road building has occurred, efforts need to be made to rehabilitate roads.

Recommendation 15: The Forest Manager must develop a road rehabilitation strategy for the next FMP to ensure that unwarranted roads are rehabilitated and returned to the productive forest landbase.

Independent Forest Audit – Record of Finding
Recommendation 16

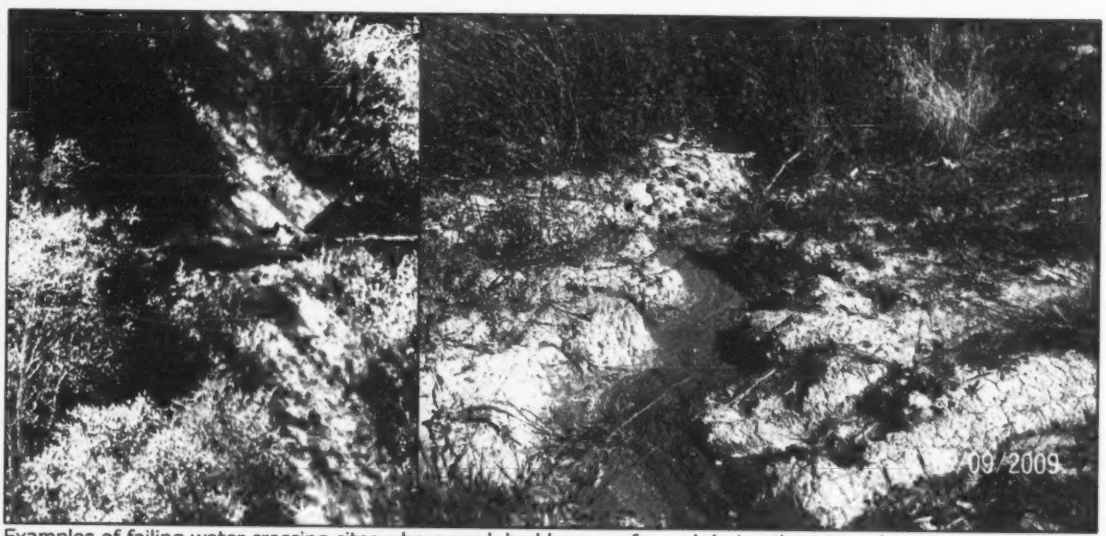
Principle: 4. Plan Assessment and Implementation

Criterion: 4.1 Access

Procedure: 4.7.1 Assess in the field the implementation of approved access activities

Background Information and Summary of Evidence: During the field portion of the audit, numerous water crossings and drainages were examined. Marked improvements were noted in water crossing installations from that described in the past IFA. Cross drainage installations were also noted to have improved.

Although improvements were noted, water crossing installations that were performed in winter were found to be inadequate or failing. Erosion of surfaces of winter roads and unstable slopes of water crossings was found at several crossings that had been installed during the winter.



Examples of failing water crossing sites where work had been performed during the winter (aerial view on left).

Discussion: Water crossings are particularly challenging to install during winter months. Even with adequate care a winter installation can fail as snow pack melts and frozen soil thaws. Often harvest operations are completed before spring thaw and failing water crossings can go unnoticed. Even properly installed crossings can fail during and after spring thaw.

Conclusion: Monitoring is required to properly address the potential failure of water crossings that are installed during the winter. A monitoring program should ensure that all water crossings that are installed during the winter are inspected after the spring thaw following their installation.

Recommendation 16: The Forest Manager must develop a monitoring program to ensure that all water crossings installed during the winter are inspected immediately following the first spring thaw after their installation, and incorporate the monitoring strategy into the FMP.

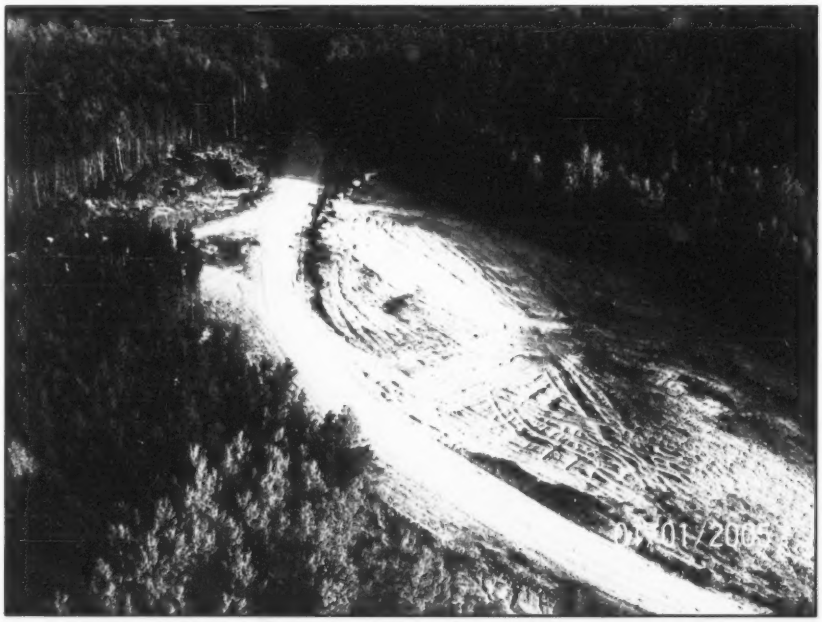
Independent Forest Audit – Record of Finding
Recommendation 17

Principle: 4. Plan Assessment and Implementation

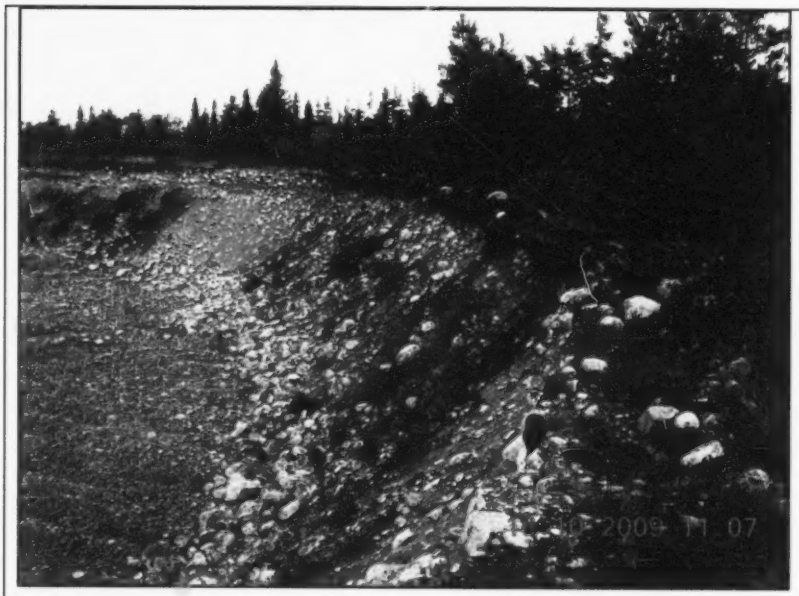
Criterion: 4.1 Access

Procedure: 4.7.1 Assess whether roads have been constructed, maintained, and decommissioned to minimize environmental impacts and provide for public and operator safety.

Background Information and Summary of Evidence: A number of aggregate pits were viewed during the field audit. All of the pits except one were found to be in good condition, the result of the cooperative effort between Abitibi and MNR to monitor and rehabilitate pits where necessary. An example of a typical rehabilitation is shown in the following figure.



One aggregate pit was found to have been operated since the rehabilitation effort had been completed without proper rehabilitation in the interest of public safety. Progressive rehabilitation needs to consider public safety at all times during the life of a pit. Although this was the only instance of a pit that needed work, the audit team gives a recommendation to ensure remediation of the concern. The following photograph illustrates the condition of this pit at the time of the site visit.



Discussion: This is a Category 9 pit with no specific requirement for rehabilitation until final rehabilitation. However, progressive rehabilitation, as outlined in the Aggregate Resources Act, R.S.O 1990, c. A.8 should be given full consideration, particularly in the interest of public safety.

Recommendation 17: The Forest Manager must ensure that the interests of public safety are paramount for establishing pit rehabilitation requirements for all pits at all times.

Independent Forest Audit – Record of Finding
Recommendation 18

Principle: 6. Monitoring

Criterion: 6.3 Silviculture Standards and Assessment Program

Procedure: 6.3.2 Assess whether the SFL/management unit assessment program is sufficient and is being used to provide the required silviculture effectiveness monitoring

Background Information and Summary of Evidence: The company invested significant resources in completing a very large silviculture monitoring program during the audit term. The regular FTG program was completed by company staff mainly by helicopter where appropriate but also through ground plots when more intensive assessment was required (using the Well Spaced Free Growing Assessment method). The FTG program totalled 18,140 ha of 28,243 ha planned for the 2004-09 term (~64%). The under-achievement was partially due to reduced activities during the audit term but was also due to undertaking the assessment of a very large area categorized in the inventory at the time as barren and scattered (i.e. backlog). The backlog area was mainly composed of older blow down areas, areas naturally regenerating following fires and areas regenerating following harvest.

The barren and scattered/backlog update project was completed by a contracted firm during leaf-off periods in the fall of 2004 and spring of 2005. The methodology was low-level helicopter fly-through with at least two calibration landings per day. MNR was involved with some of the early meetings between the company and contractor and also participated in the helicopter during the pilot project (a few base maps were completed in the fall of 2004 in advance of starting the entire project). Of the ~72,000 ha reports as surveyed, ~53,000 ha was declared FTG (~74%) - results were included in the 2007-08 Annual Report.

The audit included a ten percent sample, mainly by helicopter, of the regular and backlog update assessment areas. It was found in many of the backlog update areas deemed FTG that the hardwood composition was under-represented and that age and height was under-estimated in the inventory. The extent of the discrepancies between the original survey data and the status of the surveyed areas as observed by the audit tam could only be attributed to inaccurate calls during the original survey.

Completing assessment work during the leaf-off period is the likely source of the under-estimation of hardwood composition noted. Under-estimation of hardwood composition during surveys is a concern because full detection of forest change will be delayed until the next FRI is completed. Age/height issues are discussed in the next paragraph. Other than age, similar issues were found with the regular FTG program while stocking was also sometimes over-estimated and broad stratification was also noted.

From an examination of the backlog update project specifications and through interviews with company, MNR and contractor staff, it was determined that age was based on the year of disturbance i.e. the 1991 Pakwash blow down area was aged as ~14 years old in 2005. While this methodology is appropriate for disturbances where full kill or removal of the entire stand occurs (such as wildfire or clearcut harvest), it is not always appropriate for disturbances such as blow down that may leave considerable standing trees and/or advanced growth. For example, what was found during the audit of the Pakwash blow down area was that most of the regenerating trees were under-story advanced growth from the previous stand that are now approximately 40 years old. These trees are also much taller than what is in the inventory (~10 to 12 m on average versus 3 to 7 m).

Discussion: It is estimated that the barren and scattered survey cost over one-half million dollars to complete (~$6/ha) but timing of the assessment and the methodology required for updating the inventory reduced the accuracy of the product. It is important that future surveys are completed in a manner that allows for accurate hardwood estimation and that the inventory updating process maintains the accuracy of field information.

Conclusion: FTG records updated during the audit term need to be reviewed to ensure the data is accurate. The following recommendation builds on that recommendation by ensuring that the original field data is fully incorporated. The audit team believes that, following the update and verification that will occur as a result of the recommendation provided below, the inventory of barren and scattered areas will suffice for strategic-level planning until the next full inventory is completed.

Recommendation 18: MNR Kenora District must ensure that a review of the original field data of the barren and scattered survey occurs and that the inventory is appropriately updated with this information.

Independent Forest Audit – Record of Finding
Recommendation 19

Principle: 6. Monitoring

Criterion: 6.5 Annual Reports

Procedure: 6.5.1 Assess whether the text, tables and maps including digital information is accurate, complete and in accordance with the applicable; requirements
6.5.2 Assesses progress towards the objectives and targets identified in the FMP
6.5.3 Assess whether the observations and implications accurately reflect the levels of forest operations that have been implemented to date, any implications on achievement of objectives/targets of the FMP and future levels of forest operations

Background Information and Summary of Evidence:

1. Annual reporting during the audit term was fairly well done. Numbers in text and tables were often in agreement and 'to date' summaries were usually correct. However there were some concerns noted regarding the accuracy of some information. For example, the amount of assessment in the 2007-08 and 2008-09 ARs was incorrect and there were discrepancies in values within ARs. For example the 2007-08 AR suggests on one page that 7,199 ha was sprayed for jack pine budworm while on another page over 28,400 ha was sprayed. The latter was found to be correct.

2. Non-compliance (NC) was reported and discussed in the ARs but text regarding the reason for non-compliance and actions taken was cursory. It is unclear from the limited discussion provided how further EMS training is actually addressing recurring NC issues, such as trespass. The ARs also discuss specific road and crossing repairs and maintenance completed each year as required but there is nothing mentioned relative to effectiveness of road use management strategies. This may be due to having only completed decommissioning work in the last year of the plan term and thus having little effectiveness.

3. A large amount of area was assessed for renewal during the audit term. For areas that had been managed, silviculture success (i.e. following the path chosen) and regeneration success (i.e. not following intended path but adequate amounts of acceptable tree species present) was calculated and summarized in the ARs. However, important required information on how silviculture success is affecting plan objectives and other potential implications was not included in the ARs.

   In one AR the following is provided:
   Silvicultural success to the projected forest unit on normal harvest areas and natural disturbed areas was 53% of the area successfully regenerated. The ingress of jack pine and eventual dominance on 1,317 ha of area projected as SPDOM treated with a black spruce planting was the main contributing factor to decreasing the silvicultural success rate. Other contributing factors were the establishment of 437 ha of MIXED and 119 ha of PODOM forest units on projected SPDOM areas.

4. Under-achievement of tending was found to be a considerable issue in the 1999-2004 IFA for the Whiskey Jack Forest. The lack of tending during this audit term raises significant concerns regarding objective achievement and future forest condition.

   The ARs however include little discussion regarding the affect of the lack of tending (e.g.):
   The absence of a chemical tending program is a concern to the success of certain plantations.

   The limited tending on the forest may impede achievement of the forecasted forest condition, as described in the FMP. The inability to economically provided opportunity for optimum tree growth, could over time change the species composition of the forest by faster growing (poplar, white birch) becoming more frequent and slower growing, shade intolerant species (jack pine, spruce) becoming less frequent on the forest. This change will impact the local forest users dramatically. Similarly, recent renewal efforts may not result in expected results due to lack of tending operations, generating an increase in areas declared not sufficiently reforested.

More recent ARs also include the following regarding the lack of tending:
Prompt renewal activities with the use of superior growing stock are assisting to offset the absence of chemical tending.

5. Under-achievement of harvest area, volume targets and most renewal activities is documented in all ARs but there is little discussion regarding how this affects or will affect the achievement of plan objectives.

6. One objective in the 2004-2024 FMP was to move towards the template disturbance frequency through reducing fragmentation on the Forest. The ARs contain minimal information regarding this:
This being the third Annual Report of the 2004 FMP, there is not sufficient data available to mark the progress of meeting the frequency/size distribution objective. Reports for years 4 and 5 would provide a better indication of progress.

Unfortunately there is little provided in the year 4 and 5 reports – from the 2008-09 AR:
Harvesting on 5.3 ha occurred in location ID 561 in 2008-09. The remaining area harvested this year was within contingency blocks amended to the FMP thus were not part of the planned clear cut analysis conducted in the 2004 FMP.

Other notable discussions/assessments missing from some or all ARs:
- the need to increase, maintain or decrease renewal rates
- the reason for non-compliances and kinds of actions taken to mitigate non-conformances
- implications on achievement of long-term management direction not included with the assessment of regeneration success
- effectiveness of use management strategies for roads

Discussion: The ARs generally cover required topics but in depth analysis and discussion is lacking. For example, deviations between planned and actual activity amounts were provided and reasoning was often provided for achievement rates but discussion of how this affected or will affect plan objectives did not occur. Potential implications were sometimes discussed but with little detail. For example, the average silviculture success rate over the term was 71% but the implications of this were not discussed. Some discussion of possible affects of no tending was provided but some text actually raised questions rather than answered questions – e.g. what studies were done to determine how superior growing stock is offsetting the lack of tending? Regarding analysis of planned clear cuts, Table AR-3 in the later ARs indicates a number of planned clearcuts are completed, certainly enough to start discussing movement towards meeting this objective.

Conclusion: ARs should be a clear and accurate presentation of annual forest operations but are often inadequately and/or hastily prepared. ARs normally meet the basic accounting/summary of operations FMPM requirements but miss the deeper discussions required of the FMPM. Moving forward, this should be considered during development of ARs.

Recommendation 19: The Forest Manager must ensure that:
a) all information in the Annual Report is confirmed for accuracy prior to finalization,
b) future Annual Reports contain all required discussions including progress towards achievement of plan objectives, potential implications of operations on future operations and effectiveness of road use management strategies.

Independent Forest Audit – Record of Finding
Recommendation 20

Principle: 7. Achievement of Management Objectives and Forest Sustainability

Criterion: 7.1 Year Ten Annual Report

Procedures: 7.1.1 to 7.1.7

Background Information and Summary of Evidence:

1. As per the regular ARs audited, there were inconsistencies noted in the Year 10 AR. For example, there were discrepancies between the individual AR harvest areas and associated harvest volumes versus the total in the Year 10 AR; however, all renewal and compliance values were found to be correct. There was also a difference in area assessed – individual ARs total 19,162 ha vs the Year 10 AR total of 17,235 ha. The 2007-08 and 2008-09 ARs had errors that led to this difference.

2. The Year 10 AR included a review of renewal and tending operations during the term as well as expenditures, silvicultural effectiveness and harvest/renewal trends. Section 4.2 also included a discussion of renewal trends, etc. but, according to the author, "the change in forest units in the 2004-2024 FMP makes it difficult to compare between terms". Lack of aerial spray and likely changes to forest composition and the inability to provide the preferred future forest condition was also noted as was the increased use of planting without site preparation. Although "this practice has been limited to the least competitive sites, until herbicides can be used", direct planting viewed during the audit occurred on a variety of sites, including some very competitive sites.

   There was no discussion in the Year 10 AR regarding changes that may affect future silviculture effectiveness or expenditures and although there were three changes to renewal rates during the audit term, there was no rationale for this in any of the ARs including the Year 10 AR.

   There was no discussion regarding the effectiveness of silvicultural treatment packages that are exceptions to the forest management guides in the text.

3. The Year 10 AR includes the following:

   Many of the model assumptions are difficult to assess for two reasons. The 2009-2012 Contingency Plan carried forward the objectives, strategies, modeling, and targets from the 2004-2024 FMP. The assessment of forest conditions, habitat levels, yield curve adjustments, age class distribution, forest unit classification, etc. were not conducted for the 2009 plan, thus not available for comparison to 2004 targets. Secondly, with only 57% of the forecast harvest area being achieved, targets related to yield, disturbance patterns, silviculture, budgets, etc. may be skewed due to selection and location of harvest allocations.

   This discussion does not meet the FMPM requirements.

4. The Year 10 AR includes a section regarding the 1999-2004 IFA action plan but it is merely a summary of the recommendations and suggestions from the audit and a cursory note that "All recommendations have been addressed in the draft action plan currently in the final stages of approval by the MNR. The status of these action items is completed with the exception of two recommendations".

5. According to Table AR-20 in the Year 10 AR, many of the objectives cannot be assessed because the 2009-2012 Contingency Plan did not run SFMM and the FRI for the 2009-2019 FMP, which was never developed, had some new forest units.

6. Section 4.6.1 of the Year 10 AR includes a Social and Economic Review that focuses on mill closures and the working group developed between MNR and Grassy Narrows First Nation as well as the intended surrender of the SFL by ACCC. This does not meet the FMPM requirements (Part E 4.6.1) that an updated social and economic description be prepared.

7. The FMPM Part E 4.6.2 requires that recommendations be developed as a result of the determination of sustainability and social and economic review. The recommendations are to focus on considerations for the

next FMP including changes to the LTMD and forest operations. Considering the issues noted in ARs and witnessed during the audit, this section should be substantial and should 'set the stage' for the next FMP. Unfortunately, only the following was provided:

Due to the current conditions of the forest industry, many objectives or targets were not achieved during this term. Similarly, the development of the 2009-2012 Contingency Plan by carrying forward objectives and targets from the 2004-2024 FMP did not allow for a complete assessment. The 2011 and 2012 Annual Reports should provide an assessment of achievements for the eight year term (2004-2012).

Discussion:

1. The Year 10 AR was a fairly accurate compilation of activities that occurred during the 2004-09 term but errors still occurred when compared to a summary of the ARs.

2. Some attempt should have been made to analyze the main forest units (pj dom, sb dom, pt dom, mixed wood) to determine renewal trends. Also, it was noted that the analyses contained in the Year 10 AR were not carried forward into the 2009-2012 Contingency Plan since the strategic direction from the 2004-2024 FMP had to be used. It is expected that gains in knowledge made over the audit term and beyond will need to be incorporated in the planning for the next full FMP for the Whiskey Jack Forest. Thus, this work needs to be completed.

3. The requirement is that, based on new information, operations, etc., the 2004-2024 FMP assumptions are reviewed so that modifications/revisions can occur in the next FMP. Although the next plan turned out to be a three year Contingency Plan for 2009-2012 that used the strategic direction from the 2004-2024 FMP, this review still needs to be done for future use (i.e. the development of the 2012-2022 FMP) which was already under way during the conduct of the audit.

4. The text provided in the Year 10 AR does not fulfill the FMPM requirement that the text summarize the IFA action plan, including a discussion of the progress on implementation and any implications.

5. SFMM could have been re-run at the end of the term with the actual harvest areas to determine the trends. Likewise, the inventory for the 2004-2024 FMP could have been updated with accruals and depletions to 2009 without changing the forest units.

6. The Social and Economic Review does not meet the FMPM requirements (Part E 4.6.1) that an updated social and economic description be prepared.

7. The proposed delay of required work to another AR does not meet FMPM requirements.

Conclusion: Overall, the tendency in the ARs reviewed, including the Year 10 AR, was to provide cursory explanations for many important trends, delay required analyses and give poor explanations for not completing required work. The level of analysis and discussion in the Year 10 AR is deemed to be sub-par and inadequate and a recommendation is made to revise the AR to meet requirements.

Recommendation 20: MNR Kenora District must ensure that the 2008-09 Year 10 AR is revised to include the following:

a) analysis/discussion of changes that may affect future levels, effectiveness and expenditures of renewal and tending operations,
b) analysis/discussion of effectiveness of silvicultural treatment packages that are exceptions to the forest management guides,
c) review/discussion of needed modifications or refinements to modeling assumptions,
d) a summary of progress on implementation of the 1999-2004 IFA Action Plan,
e) an update of the inventory and running of SFMM at plan end (2009) to determine objective achievement,
f) an update of the 2004-2024 FMP social and economic description, and
g) based on the determination of sustainability and the social and economic review, develop recommendations for the next FMP.

Independent Forest Audit – Record of Finding **Recommendation 21**
Principle: 8. Contractual Obligations **Criterion:** 8.1.9 Audit action plan and status report **Procedure:** 8.1.9 Assess whether the action plan was prepared in accordance with requirements. 8.1.9.2 Assess whether status report was prepared in accordance with requirements.
Background Information and Summary of Evidence: During the 2004 IFA one of the key recommendations was that the Action Plan Status Report for the 1999 IFA be submitted, to allow MNR to act on the recommendation by the 1999 IFA audit team that the licence be extended. The Minister typically requires demonstrated progress on the actions associated with recommendations arising from an IFA before the licence is extended; the audit action plan status report documents that progress and provides supporting information necessary to make such a decision. As of the start of the 2009 IFA the 1999 IFA action plan status report was not finalized; however the licence was extended in 2006. The 2004 IFA action plan had not been finalized; and therefore neither had the status report been prepared at the time of the 2009 IFA. The 2004 IFAPP required the action plan be prepared subject to written MNR approval within two months of receipt of the final audit report, unless otherwise directed by the Minister. The audit report was submitted in April 2005. There was no evidence that an extension to the submission time for the audit action plan was granted. The audit team reviewed email records mostly from April 2008 to June 2009 between the MNR Northwest Region and SFL representatives and/or MNR staff regarding preparation of the audit action plan and status report, including the 1999 IFA status report. There was only a single record of correspondence on the subject between August 2005 and April 2008. The audit team also spoke with MNR Kenora District staff, the Northwest Region representative and an SFL representative on this subject.
Conclusion: It appears that the strained working relationship between the District and ACCC and priority given to what were deemed other more pressing tasks were at the root of the failure to meet IFAPP action plan and status report submission requirements. The lack of regular communication between all parties with responsibility to prepare the action plans and status reports also appears to be a contributing factor in the protracted delays in submission. Despite this, the delays in submission of these documents did not significantly impact implementation of actions to address the recommendations arising from the 2004 IFA.
Recommendation 21: The MNR Kenora District Manager and the Forest Manager must ensure that the audit action plan and status report comply with all IFAPP submission requirements.

Appendix 2 – Management Objectives Tables

2004-2024 Forest Management Plan - Whiskey Jack Forest

Objective		Assessment - Auditor Comments
Forest Diversity Objectives		
Forest Structure	Maintain or move toward a natural age class structure that is within the estimated bounds of natural variation for the Whiskey Jack Forest through management planning and silviculture.	Not Met - due to declining harvest rates related to economic factors outside the control of forest managers.
Forest Composition	Maintain or move toward a range of forest units and age classes within the bounds of natural variation as developed for the Whiskey Jack Forest.	Not Met - due to lack of tending.
Natural Disturbance Emulation	Emulate natural disturbance patterns, characteristic of the Whiskey Jack Forest.	Met - NDPE guidelines applied appropriately.
Social and Economic Matters Objectives		
Sustained Wood Supply	Provide a predictable and continuous supply of wood to the forest products industry from the Whiskey Jack Forest.	Not Met - due to ongoing dispute with Grassy Narrows First Nation and market collapse, which are factors outside the control of forest managers.
Working with Aboriginal Peoples	Work with local Aboriginal peoples, whose communities are situated in or adjacent to the Whiskey Jack Forest, to identify and implement forest operations (harvest, access, renewal, maintenance and protection) that will maintain or enhance social and economic benefits to Aboriginal peoples. Targets (non-quantifiable): • Provide opportunity to harvest, through overlapping license, 10,000 m^3 on an annual basis to members of the Grassy Narrows First Nation. • Provide opportunity to harvest, through overlapping license, 10,000 m^3 on an annual basis to members of the Wabauskang First Nation.	Met - 52,868 m^3 allocated for harvest by OFRL holders in Table FMP-23. No volumes reported as harvested by Grassy Narrows FN. Wabauskang FN community member harvest averaged 26,000 m^3 per year. Tree planting and tree thinning work conducted by Aboriginal contractor.
Forest Resources for Personal and Commercial Use	Make available incidental volumes of timber for other uses such as fuelwood, building logs, furniture and other materials. (These incidental volumes will come from areas allocated within this FMP).	Met - ARs note personal use of fuel wood during term. MNR confirmed availability.

Objective		Assessment - Auditor Comments
Tourism, Commercial and Non-commercial Users	Select and prescribe forest operations (harvest, renewal, maintenance, protection and access) that consider the requirements of other forest users, allowing continued use of the forest while minimizing conflict between forest operations and other forest users.	Met Road systems were generally open for public use and roads were maintained while company was operating. 43 tourism operators responded and 33 accepted invitation to participate in RSA process – the group was further refined as individuals inspected the proposed area of operations maps. 13 RSAs were negotiated and drafted for signature. These RSAs provided the basis for tourism AOC prescriptions for the Plan. Public consultation process was followed; AOC planning provided opportunities for discussion and protection of known values.
Other Land Uses	Conduct forest management activities in a manner that considers private land, parks and other land designations or values.	Met - AOC prescriptions were followed for all AOCs examined in the field portion of the audit.
Cultural Heritage Values	Protect identified, registered, or high potential archaeological and cultural heritage sites from conditions that could potentially damage or cause an increase in rates of deterioration.	Met - High Potential Cultural Heritage AOCs applied and implemented; AOC prescription permits timber harvest only when ground conditions prevent surface soil damage – no SIP – winter roads permitted when ground frozen and <1% of AOC is disturbed – no ditching.
Provision of Forest Cover Objectives		
Selected Wildlife Species	Provide suitable/preferred habitat within the bounds of natural variability for the selected wildlife species within the Whiskey Jack Forest.	Met in planning phase. Only Great Grey Owl falls below the null and only by 1.65% for one term. Silviculture direction of the FMP was not implemented thereby compromising the ability to meet this objective in the long term. See Recommendation 3.
Woodland Caribou	Maintain or improve contribution of the Whiskey Jack Forest to continued range occupancy and healthy populations of woodland caribou in Northwestern Ontario.	Met - The Northwest portion of the Whiskey Jack Forest is managed under Woodland Caribou guidelines. No forestry activities had occurred in this area during the audit term.

Objective		Assessment - Auditor Comments
Marten	Maintain or move toward having 10-20% of capable marten habitat area in suitable conditions arranged in core areas of 3,000 to 5,000 hectares.	Not Met FMP only provides for 3.7% in 36 cores - deferral of these 36 cores for the next 60 years, providing there is no natural disturbance, will provide for an increase of suitable marten habitat to 70,603 ha (10.4% capable) by 2064. Silviculture direction of the FMP was not implemented thereby compromising the ability to meet this objective in the long term. Without implementing planned silviculture direction future marten habitat is unlikely to improve significantly. See Recommendation 3.
Moose	Retain a year round supply of suitable habitat (including foraging and winter habitat) for moose on the Whiskey Jack Forest.	Partially Met - See Appendix 8D, pg. 18 of the 2004-2024 Whiskey Jack Forest FMP. Shelter patches not all refined as planned. See Recommendation 6.
Stick Nests	Provide for the protection of nest sites and associated habitat of bald eagle, osprey, great blue heron and other locally significant forest dwelling raptors.	Met - Accomplished through application of various AOCs associated with each of these species.
Soil	Minimize any possible adverse effects of forest practices on soil quality.	Partially Met - Rutting no longer an issue on forest but compaction of fine textured soils appears to be an issue on some sites viewed. See Recommendation 7.
Fisheries and Water Quality Function	Maintain riparian habitat, water quality and to prevent the harmful alteration, disruption or destruction of fisheries habitat where forest management activities occur.	Partially Met - Riparian AOCs implemented. Water crossings that are installed during the winter need monitoring to address erosion concerns. See Recommendation 16.
Silvicultural Objective		
Silviculture	Apply the most appropriate level of silviculture that will ensure the long-term forest sustainability while consistent with all other objectives of this plan.	Not Met - Planting objective over-achieved but most trees were direct planted. Therefore SIP and seeding under-achieved. SIP too wide and too light, direct plant is resulting in low stocking. Tending almost non-existent. Target stocking and species composition objectives will not be met. See Recommendation 9, Recommendation 10, Recommendation 11, Recommendation 12.

Appendix 3 – Compliance with Contractual Obligations

The following table provides the conditions of SFL No. 542253 for the Whiskey Jack Forest. Each condition is provided on a separate row with comments by the audit team to report on the degree of attainment of the condition.

Licence Condition	Licence Holder Performance
Payment of Forestry Futures and Ontario Crown charges	Met – according to information provided to the audit team by MNR.
Wood supply commitments, MOAs, sharing arrangements, special conditions	According to annual reporting most of the wood supply commitments could have been met during the term. Poor markets were the over-riding issue that led to less than 50% of the planned volume being harvested during the term. The 2009-2012 Contingency Plan intends to meet all wood supply demands. Hardwood veneer (poplar) to Columbia Forest Products: No response from Columbia FP to audit team request for input. Non-veneer aspen and birch to Weyerhaeuser Company Limited: Not Met in 2008 due to Grassy Narrows FN actions. Jack pine, spruce and balsam to Kenora Forest Products Ltd.: Met; mill closed in 2008.
Preparation of FMP, AWS and reports; abiding by the FMP, and all other requirements of the FMPM and CFSA	Partially Met - FMPs and AWSs were generally prepared as required. However errors were noted in text and tables of ARs, in depth analysis was lacking in ARs including the Year 10 AR, and the process for revising forest operations prescriptions was not followed in the AWSs. See Recommendation 19 and Recommendation 20. Partially met with respect to following the planned silviculture plan during the term. Recommendation 9 through Recommendation 13 and related text cover on-the-ground silviculture issues discovered during the audit.
Conduct inventories, surveys, tests and studies; provision and collection of information in accordance with FIM	Met with respect to collection of survey information; however, the information is not being effectively used during planning. See Recommendation 2.
Wasteful practices not to be committed	Met – Utilization was observed to be acceptable, with minor exceptions.
Natural disturbance and salvage SFL conditions must be followed	Met – Salvage of some blown-down timber occurred during the audit term. Planning for this work met requirements.
Protection of the licence area from pest damage, participation in pest control programs	Met – Insect Pest Management Plans covering several forests including the Whiskey Jack Forest were developed and implemented in 2006 and 2007. The company had representation on the planning teams for these plans and worked with MNR to help identify and map affected areas but no plans were made to salvage these areas mainly due to inaccessibility.
Withdrawals from licence area	N/A
Audit action plan and status report	Not Met – Prolonged delays in the preparation, submission and approval of audit action plans and status reports by both the company and MNR Kenora District.

Licence Condition	Licence Holder Performance
	Neither the 1999 IFA Status Report nor the 2004 IFA audit action plan and status report were finalized by the time of the 2009 IFA. See Recommendation 21.
Payment of forest renewal charges to Forest Renewal Trust (FRT)	Partially Met – Regular contributions were made for most of the audit term.
Forest Renewal Trust eligible silviculture work	Met –Verification of maps, records, and fieldwork associated with Forest Renewal Trust Account expenditures for 2006-2007 were found to be accurate.
Forest Renewal Trust forest renewal charge analysis	Analysis conducted, however audit team recommended further review – see Recommendation 14.
Forest Renewal Trust account minimum balance	Partially Met – Minimum balance requirement met in three of five years
Silviculture standards and assessment program	Not Met - Section 16 of the SFL document outlines the silviculture standards requirement: *The Company will implement the necessary silvicultural prescriptions on lands described in paragraph 16.2 herein* (i.e. Category 2 Lands, which are essentially all areas harvested since 1994) *so as to meet the silvicultural standards described in the approved Forest Management Plan for the Whiskey Jack Forest when the silvicultural prescriptions were made, or in accordance with any amendment of that standard.* Considering the field audit findings and the silviculture monitoring results for the audit term, it is clear that the company did not fully meet its obligation with regards to silviculture standards during the audit term. Now that the licence has been officially surrendered, MNR is responsible for this obligation until a new forest management company has taken over. It is expected that completing the actions necessary to meet several recommendations in this audit may lead to fulfilling this requirement. This should be a consideration of prospective forest managers.
Aboriginal Opportunities	Met – Opportunities included wood harvesting, tree planting, slash pile burning, thinning, nuisance beaver control; opportunities provided to participate on the LCC and during forest management planning, including learning opportunities.
Preparation of compliance plan	Met - Company prepared the compliance plan and annual compliance schedule and carried out regular inspections of operations. Inspection reports were prepared and submitted as required. Overall compliance levels were considered acceptable. ACCC developed the Strategic Compliance Plan for the 2004-2024 FMP and Annual Compliance Schedules for each year during the audit term. Due to pending surrender of the SFL, MNR developed the Strategic Compliance Plan for the 2009-2012 Contingency Plan. These documents all met content requirements. ACCC also had an internal prevention/education program during the audit term, which MNR felt met the requirements and needs of forest management on the unit. As noted in the monitoring section of this audit report, there was a significant discrepancy between MNR and

Licence Condition	Licence Holder Performance
	company compliance findings during the audit term and annual reports noted the company's disagreement with some of the ministry's compliance findings. It is hoped that the new management entity for the Forest maintains a cooperative relationship with MNR so that, amongst other things, differences in compliance interpretation can be minimized. Overall, considering the significant sector downturn, contractors going out of business and mill closures, the compliance program delivered during the audit term was acceptable but compliance rates indicate that improvements can be made.
Internal compliance prevention/education program	Met – Implemented through company EMS training programs.
Compliance inspections and reporting; compliance with compliance plan	Met – Compliance plan implemented; inspections conducted and compliance reports submitted.
SFL forestry operations on mining claims	Met – No infractions reported.
SFL or Agreement extension recommendation	None made due to surrender of SFL to the Crown in August, 2009.

Appendix 4 – Audit Process

The Independent Forest Audit Process and Protocol (IFAPP) was developed by MNR to provide a comprehensive and consistent method of evaluating forest management activities on Crown land. The IFAPP (2009) states that the purpose of an Independent Forest Audit is to:

a) assess to what extent forest management planning activities comply with the Forest Management Planning Manual (FMPM) and the Crown Forest Sustainability Act (S.O. 1994, c. 25) (CFSA);
b) assess to what extent forest management activities comply with the CFSA and with the forest management plans, the manuals approved under the CFSA and the applicable guides;
c) assess the effectiveness of forest management activities in meeting the forest management objectives set out in the forest management plan, as measured in relation to the criteria established for the audit;
d) compare the forest management activities carried out with those that were planned;
e) assess the effectiveness of any action plans implemented to remedy shortcomings revealed by a previous IFA;
f) review and assess a licensee's compliance with the terms and conditions of the forest resource licence.

The IFAPP is based on eight guiding principles and contains 158 procedures, 135 of which are applicable to the Whiskey Jack Forest. Of that number a further 15 procedures were not audited due to sampling or by exemption under the IFAPP. The audit procedure serves as a framework to provide a structured approach to evaluating whether or not forest management activities meet the requirements governing forestry practices on Crown land in Ontario. The guiding principles are:

1. Commitment
2. Public consultation and Aboriginal involvement
3. Forest management planning
4. Plan assessment and implementation
5. System support
6. Monitoring
7. Achievement of management objectives and forest sustainability
8. Contractual obligations

MNR categorized the various IFA procedures based on complexity and their potential impact on forest sustainability. The IFAPP directs the audit team to assess through sampling, per audit principle and associated criteria, the three categories of procedures as follows:

- Administrative procedures – low (L) risk: 20-30% of L procedures to be assessed
- Administrative but also having a bearing on sustainable forest management – medium (M) risk: 50-75% of M procedures to be assessed
- Procedures directly related to sustainable forest management – high (H) risk: 100% of H procedures to be assessed

The lower range of the sample scale may be considered for forests certified in accordance with a sustainable forest management standard accepted by Ontario. The following table summarizes the number of procedures selected by the audit team for audit based on the direction provided by the IFAPP.

Table: Summary of the number of procedures selected by the audit team for audit based on direction provided in the IFAPP.

Principle	Procedures Audited by Risk Category							Comments
	Low Risk			Medium Risk			High Risk	
	Applicable (#)	Selected (#)	% Audited	Applicable (#)	Selected (#)	% Audited	Audited (#) (100% of applicable audited)	
1. Commitment	0	-	0	2	0	0	0	The Whiskey Jack Forest was certified to CSA Z809-02 for the majority of the audit term and therefore Principle 1 was considered met.
2. Public Consultation and Aboriginal Involvement	0	-	0	6	5	83	2	Procedure *not* audited: 2.6.1
3. Forest Management Planning	6	3	50	12	8	67	36	Procedures *not* audited: 3.2.1.1, 3.2.1.2, 3.2.2.1, 3.3.2.3, 3.6.2.1, 3.9.2.1, 3.9.3.2
4. Plan Assessment & Implementation	1	1	100	1	1	100	9	
5. System Support	0	-	0	1	1	100	1	Procedure 5.1.1 *not* audited because the Whiskey Jack Forest was certified to CSA Z809-02 for the majority of the audit term.
6. Monitoring	0	-	0	7	5	71	11	Procedures *not* audited: 6.1.2; 6.4.3
7. Achievement of Management Objectives and Forest Sustainability	0	-	0	2	1	50	13	Procedure *not* audited: 7.1.8
8. Contractual Obligations	0	-	0	4	3	75	8	Procedure *not* audited: 8.1.8.1
Totals	7	4	57	35	24	69	80	

The audit process for the Forest consisted of seven components:

1. Audit Plan: KBM prepared an audit plan that described the schedule of audit activities, audit team members and their qualifications, audit participants, and auditing methods. The audit plan was submitted to MNR, ACCC, the Forestry Futures Trust Committee, and the Chairs of the Kenora LCC and the Red Lake District Resource Management Advisory Committee.

2. Public Consultation: Several means of engaging consultation for the audit were used. Utilizing the MNR Kenora District mailing list, KBM mailed letters to numerous parties advising of the audit and inviting their input. Mail-outs included a one-page survey to solicit public input to the audit process. The survey was also available to the general public on the KBM website (www.kbm.on.ca). Newspaper ads were published in four area newspapers prior to the pre-audit meeting advising the public of the upcoming audit, identifying the purpose of the audit and inviting the public to submit comments to the LCC Chair or directly to KBM.

3. Aboriginal Engagement: KBM sent a letter to four Aboriginal communities and the Kenora Metis Association, each with either a direct relationship or involvement in forest management

planning on the Whiskey Jack Forest, inviting their participation in the IFA for the Whiskey Jack Forest. The letter requested their input and encouraged them to contact KBM if they wished to participate in the audit or if they required more information before making a decision. Follow-up phone calls were made during the site visit to encourage a response. In addition, standard public notification letters were sent to other Aboriginal communities and organizations not directly located on the Forest or involved in planning for the Forest.

4. Field Site Selection: The audit team conducted a preliminary site selection prior to meeting with ACCC and MNR staff. Annual Work Schedules and Annual Reports were used to determine the amount and type of forest operations carried out on the Forest during the audit period. A stratified random sample of sites was then selected to ensure that selected sites were representative of a cross section of all activities conducted on the Forest during the audit period. A pre-audit meeting was held in Kenora on August 5, 2009. Part of the pre-audit site visit was spent discussing the preliminary site selection and preparation of field packages with ACCC and MNR.

5. Pre-audit Document Review: Prior to the September site visit, the audit team reviewed documents provided by ACCC and MNR, including the:
    a) Whiskey Jack Forest 2004-2024 FMP and 2009-2012 Contingency Plan
    b) Annual Work Schedules and Annual Reports associated with the 2004-2024 FMP
    c) Comparison and Trend Analysis of Planned versus Actual Forest Operations Report (TAR)
    d) Whiskey Jack Forest Independent Forest Audit 1999-2004 report
    e) Whiskey Jack Forest 1999-2004 draft Independent Forest Audit Action Plan/Status Report.

    The audit team also developed a questionnaire that was circulated to planning team members and other ACCC and MNR District staff prior to the on-site audit to assess their perceptions regarding the effectiveness of specific components of forest management on the Whiskey Jack Forest. The results of the survey provided additional focus to IFAPP prescribed interview procedures that occurred on site.

6. On-Site Audit: The objectives of the field site visits were to confirm that activities were conducted according to plan, that they conformed to provincial laws, regulations, and guidelines, and that they were effective. The opening meeting was held in Kenora on September 14, 2009. During the on-site visit portion of this audit, the audit team spoke with staff of ACCC, MNR, and LCC members. The audit team examined documents, records and maps at the MNR Kenora District office, and spent three days in the field viewing selected sites. Representatives of ACCC, MNR Kenora and Red Lake Districts, MNR Forest Management Branch, and a representative of the Forestry Futures Trust Committee (FFTC) accompanied the audit team during a portion of the field audit.

    Many stops provided the opportunity to audit multiple activities such as harvesting, renewal, values protection, etc. The following table presents the actual sampling intensity for each forestry activity examined on the ground as part of the field site visits. Due to access and time constraints, the audit team relied on a helicopter to reach many of the selected field sites. The helicopter also provided opportunities for overviews of the subject areas, enabling overall examination of target blocks.

7. The closing meeting was held in Kenora on September 21, 2009. This meeting provided a forum for the audit team to present and discuss preliminary audit findings with ACCC, MNR and a representative of the Kenora LCC.

Table: Audit sampling intensity for the Whiskey Jack Forest.

Activity	Total Area or Number (2004-2009)	Area or Number Sampled	Percent Sampled
Harvest (ha)	14,283[1]	1,948	14
Artificial Regeneration (ha)	13,967[1]	1,376	10
Natural Regeneration (ha)	7,068[1]	702	10
Tending	1,369[1]	124	9
Declared FTG - Regular (ha)	12,271[1]	1,495	12
Declared FTG - Backlog (ha)	53,042[2]	7,000	13
Protection (ha)	30,805[1]	3,000	10
Area of Concern Categories[3] (#)	22	10	45
Road Construction (km)	19.2[1]	19.2	100
Specified Procedures Review[4] (ha)	4,107	678	17

[1] Source: draft 2008-09 Annual Report
[2] Source: 2007-08 Annual Report
[3] Area of Concern categories refer to the different types of AOCs present on the Forest. Examples include riparian reserves, cold water fisheries, eagle nests, etc. More than one AOC was associated with some sites selected for review of harvest and renewal operations.
[4] The Specified Procedures Review involved the verification of maps, records, and fieldwork associated with Forest Renewal Trust Account expenditures for 2006-2007.

8. Final Report: The audit results are presented in this report following a brief description of the audit process and the forest licence area under review. Within the report the audit team has made recommendations to address instances of non-conformance to a law and/or policy, or an identified lack of effectiveness in forest management activities.

   Recommendations from this audit must be addressed in an action plan developed by the Forest Manager and MNR Kenora and Red Lake Districts, with input and review by MNR Regional and Forest Management Branch representatives. MNR Regional and Forest Management Branch representatives will also develop an action plan to address any recommendations applicable to matters of forest management within the scope of responsibilities of these departments.

   Suggestions are no longer highlighted in audit reports, nor will they be addressed in action plans. Any suggestions of the audit team are incorporated within the regular text of the report.

Nineteen responses to the public notices and survey were received. Commenter's areas of interest in forest management on the Whiskey Jack Forest were recreation, employment, conservation, LCC, tourism and Aboriginal rights.

Local Citizens' Advisory Committee

Letters were mailed to all current members of the LCC to notify them of the audit and invite their input. The lead auditor attended an LCC meeting in Kenora in August, 2009 to discuss the audit and any concerns the LCC members might have about the Forest. The audit team attended an LCC meeting during the site visit to receive additional input and answer questions. A representative from the Kenora LCC and the Red Lake LCC each participated on one of the field days and a Kenora LCC representative was present during the closing meeting.

LCC representatives interviewed were generally complimentary of the support provided to the LCC by MNR; however concern was expressed by one member that the LCC's opinions were not always welcomed by MNR. Both LCCs stated that attendance by the public at information sessions was low despite the sessions being well organized and informative. It was felt that people typically only attend if they are directly affected by proposed forest management activities. A Kenora LCC representative expressed major concerns with the accuracy of the forest resource inventory, and the reliability of SFMM, citing that the LCC has no expertise to satisfy them of the sustainability of the forest and must rely on the audit.

Aboriginal Communities

A letter was mailed to each of the Aboriginal communities on the MNR District contact list inviting them to participate in the audit. The letter explained that their input is welcomed and encouraged them to contact KBM if they wish to participate in the audit or if they require more information before making a decision. Follow-up phone calls were made to further solicit input. Separate in-person meetings were held with representatives of Wabaseemoong First Nation and Grassy Narrows members of the Forest Management Working Group. Grassy Narrows representatives presented a lengthy list of concerns that it considers unresolved and expressed dissatisfaction with what they consider a lack of meaningful progress in discussions under the Process Agreement with MNR. Wabeseemoong representatives did not state that they had specific significant concerns with forest management on the Whiskey Jack Forest at this time.

Overlapping Licensees, Contractors and Commitment Holders

All businesses listed in the MNR District mailing list were sent the one-page KBM survey and letter soliciting input to the audit. Two of three commitment holders responded noting commitments were met in four of the five years. In 2008 commitments were not met due to circumstances beyond the control of the licensee. A meeting with Weyerhaeuser representatives took place during the audit. They expressed concerns that delays in the planning process and deficiencies in operational planning may negatively impact upon their ability to realize their commitments in the future.

SFL Holder

Interviews were held with the company's current planning forester and the former forestry superintendent. Information on the surrender agreement was also provided by SFL senior management. The current planning forester attended the site visit including portions of the field audit. Two senior managers participated in the opening meeting and one in the closing meeting via conference call. The audit team appreciates ACCC's efforts in supporting the audit process.

Ministry of Natural Resources

Interviews were held with Kenora District staff including the District Manager, Area Supervisor, Area Forester, Area Biologist, Area Technicians and Resource Liaison Specialist. MNR District personnel also accompanied the audit team in the field for one day including the Area Supervisor, Area Forester, and Area Technicians. The pre-audit meeting and audit opening and closing meetings were attended by MNR District personnel. The audit team appreciates the cooperation and assistance provided by MNR Kenora District staff in preparing the audit field packages and coordinating the field site visits.

One MNR Northwest Region representative participated in the pre-audit meeting and the closing meeting via teleconference.

Two representatives from MNR Forest Management Branch attended one field day and the Branch was also represented during the pre-audit meeting and closing meeting via teleconference.

Forestry Futures Trust Committee

One representative from the Forestry Futures Trust Committee participated in the pre-audit meeting via conference call, two representatives attended the opening meeting and one field day, and two representatives attended the closing meeting via teleconference.

Appendix 5 – List of Acronyms

ACCC	Abitibi-Consolidated Company of Canada
ACOP	Annual Compliance Operating Plan
AOC	Area of Concern
AR	Annual Report
AWS	Annual Work Schedule
Btk	Bacillus thuringiensis kurstaki
CEA(SFM)	Certified Environmental Auditor (Sustainable Forest Management)
CFSA	Crown Forest Sustainability Act
CP	Contingency Plan
CSA	Canadian Standards Association
EMS	Environmental Management System
EMS(LA)	Environmental Management System Lead Auditor
FFTC	Forestry Futures Trust Committee
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FOIP	Forest Operations Information Program
FOP	Forest Operations Prescription
FRI	Forest Resource Inventory
FRTF	Forest Renewal Trust Fund
FTG	Free-to-Grow
GIS	Geographic Information System
GNFN	Grassy Narrows First Nation
IEA	Individual Environmental Assessment
IFA	Independent Forest Audit
IFAPP	Independent Forest Audit Process and Protocol
LCC	Local Citizens Committee
LTMD	long term management direction
MNR	Ministry of Natural Resources
MOA	Memorandum of Agreement
MOE	Ministry of Environment
R.P.F.	Registered Professional Forester
RSA	Resource Stewardship Agreement
SAP	supplemental aerial photography
SFL	Sustainable Forest Licence
SGR	Silviculture Ground Rule
SIP	Site Preparation
SMA	Selected Management Alternative
TAR	Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

Appendix 6 – Audit Team Members and Qualifications

Name/Role	Mr. Rod Seabrook • Lead Auditor • Public Consultation and Aboriginal Involvement
Responsibilities	Overall audit coordination and oversight of activities of the audit team; including public consultation and Aboriginal involvement in forest management planning; lead the assessment of achievement of management objectives, forest sustainability and contractual obligations
Credentials	M.Sc. Biology; CEA(SFM); EMS(LA); 29 years forestry experience in Ontario; principal area of practice is forest management and environmental auditing; accredited as a Certified Environmental Auditor (Sustainable Forest Management) by the Canadian Environmental Certification Approvals Board and as an Environmental Management System Lead Auditor by the Auditing Association of Canada; Associate member of the Ontario Professional Foresters Association; ten years of auditing experience; participated in 20 Independent Forest Audits for the Province of Ontario (seven as lead auditor; eight as lead and wildlife/ecology auditor; three as wildlife/ecology auditor; two as secretariat); IFA experience covers all Crown managed forest types in Ontario; conducted sustainable forest management audits under the various recognized sustainable forest management standards in Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Minnesota, South Carolina, Georgia, Mississippi, Alabama, and Texas; participated in over 90 3rd party audits to the ISO 14001 EMS, CSA Z809, SFIS, FSC, and Chain of Custody standards.
Name/Role	Mr. Peter Higgelke • Wildlife/Ecology/Planning
Responsibilities	Inspect AOC documentation and practices; audit aspects of forest management related to environmental protection and wildlife practices; review access management program; review aspects of planning; assess achievement of management objectives, forest sustainability and contractual obligations
Credentials	R.P.F., M.Sc.F.; 29 years forestry experience in Ontario, Quebec, and Germany; served on one FMA Review and 16 IFAs, under a range of audit roles including Lead, Harvesting, Silviculture, Wildlife and Planning Auditor as well as auditing under FSC, including three forest management certification audits, three forest management scoping audits, six forest management surveillance audits and one chain-of-custody audit; completed ISO 14001 EMS Lead Auditor training through the Quality Management Institute in April 2006. Extensive knowledge and experience with wildlife and forest management as well as Aboriginal communities; interim plan author for the Lake Nipigon Forest 2010-20 FMP; primary areas of practice and disciplinary expertise are forest management, application development for the use of GIS technology in forest management, the integration of timber management and wildlife values, public participation in forest management planning, and participation by Aboriginal communities in forest management.
Name/Role	Mr. Laird Van Damme • Planning/Harvest
Responsibilities	Assess adherence to forest management planning requirements; assess compliance and monitoring programs; assess achievement of management objectives, forest sustainability and contractual obligations
Credentials	R.P.F., M.Sc.F.; 23 years experience as a practising forester, educator and consultant; primary areas of practice are in the disciplines of silviculture, forest management and forest research; completed ISO 14001 EMS Lead

	Auditor training course through the Quality Management Institute; served as a forestry auditor on 14 previous IFAs and several certification audits; Lead Auditor on two IFAs; led the Model Forest Program evaluation and the last National Forest Strategy evaluation; authored four FMPs and published numerous scientific and professional papers as an adjunct professor at Lakehead University; consultant to the government of Saskatchewan on forest management planning standards and landscape planning projects in Alberta; peer reviewer of forest management plans and certification audits.
Name/Role	Mr. Brad Chaulk • Silviculture
Responsibilities	Assess renewal and tending program; assess achievement of management objectives and forest sustainability.
Credentials	R.P.F., H.B.Sc.F.; 17 years of forestry experience; areas of particular experience include silvicultural practices and inventory systems including project management; diverse experiences as a tree plant supervisor, head of propagation and seedbed foreman at one of Ontario's largest nurseries, and as the supervisor and manager of technical services at KBM; member on 14 IFA teams; prepared pre- and post-harvest forest operating prescriptions and developed preferred harvest strategies, site preparation techniques, and planting/ tending regimes for individual harvest blocks; completed Managed Forest Tax Incentive Program plans for private landowners; conducted and written wood supply reports/timber analyses; considerable experience using the Forest Ecosite Classification systems for both Northwestern and Northeastern Ontario as well as the new Harmonized Ecosite Classification System for the Province; co-author Field Guide to Second Generation Progeny Test Establishment, Management and Assessment; plan author for the Black Sturgeon Forest 2006-2026 FMP; lead author of the Silvicultural Ground Rules for the Dog River-Matawin 2005-2025 FMP; project manager for both the Lake Nipigon Forest 2010-2020 FMP and the English River Forest 2009-2019 FMP; certified to interpret aerial photography in Ontario's Boreal Forest; teaches forest management planning at Confederation College.
Name/Role	Mr. Keith Hautala • Modeling
Responsibilities	Review SFMM strategic planning; assist in assessment of achievement of management objectives and forest sustainability.
Credentials	M.Sc.F.; 11 years of forestry experience in Ontario with an emphasis on long-term forest management planning, wildlife habitat analysis, strategic-level forest modeling, and forest auditing; participated in six IFAs in the position of Forest Modeling Auditor and an additional four as Secretariat; auditing responsibilities have included reviewing the assumptions, composition, and documentation of long-term strategic models, examining the development and evaluation of management alternatives, and assessing the achievement of management objectives and forest sustainability; teaches plant biology and wildlife courses at Confederation College.
Name/Role	Ms. Sonia Colombo • Audit Secretariat
Responsibilities	Provide general support in the execution of the IFA including logistics, evidence gathering, and report development.
Credentials	Dipl. For. Tech.; 20 years experience in forestry, focusing on forest renewal; established, and is in charge of, the Seedling Assessment Lab at KBM Forestry Consultants Inc. conducting third-party stock quality testing for private nurseries and forest companies; Administrative Assistant on three Independent Forest Audits; completed ISO 14001:2004 Lead Auditor training; participated in two ISO 14001:2004 audits as a provisional auditor.

Appendix 7 – Comparison and Trend Analysis Report

Whiskey Jack Forest

Comparison and Trend Analysis Report

of

Planned vs. Actual Forest Operations

for the term

April 1, 2004 to March 31, 2009

Prepared and Submitted by David C. Legg, RPF
AbitibiBowater
September 11, 2009

abitibi bowater

Introduction

The Whiskey Jack Forest is managed by Abitibi-Consolidated Company of Canada (operating as AbitibiBowater), in the Kenora and Red Lake Administrative Districts of the Ontario Ministry of Natural Resources (MNR). The Whiskey Jack Forest was created through the amalgamation of the Pakwash and Patricia SFLs, which came into effect on April 1, 1997. This report compares planned and actual operations on the Whiskey Jack Forest for the 2004-2009 term to the previous 2 terms (1994-1999 and 1999-2004) to determine trends.

The current term being evaluated was covered by two management plan; the Whiskey Jack Forest 2004 Contingency Plan, and the 2004-2014 Forest Management Plan (FMP). Both plans were authored by Abitibi-Consolidated. The previous terms (1994-1999 and 1999-2004) being reported for comparison are represented by the 1999-2019 Whiskey Jack Forest FMP, the 1994-2014 Patricia Forest FMP, and the 1994-2014 Pakwash Forest FMP. The Whiskey Jack Forest has been managed by Abitibi-Consolidated and its predecessors since the 1950's.

Forest Condition

Table 1 and the associated graph show the total area under management. The area is currently 662,995 hectares of Crown Productive Forest. The area available for management has been relatively stable over time until the current term which has decreased slightly, primarily due to Ontario's Living Legacy initiative to increase parks and protected land area. Since the 1999 FMP, additional park land has removed 82,386 hectares from productive forests.

Patent land increased by 627 hectares due to the sale of Crown land lots.

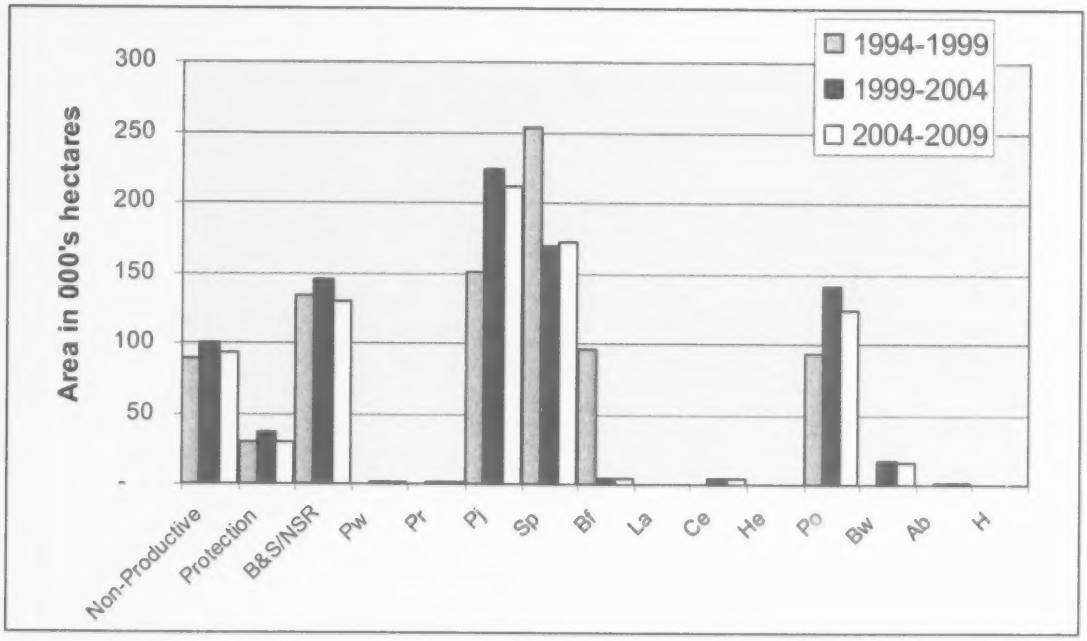
Federal land consists of 6,792 hectares; Grassy Narrows First Nations (Asubpeechoseewagong Netum Anishinabek), Wabauskang First Nations and Whitefish Bay First Nations (Naotkamegwanning). Federal lands were misrepresented in the 1999 FMP (339 hectares) and are now believed to be correct.

The 1999 FMP over-estimate the water area on the Whiskey Jack Forest by including the entire lake area if any part was within the boundary. This is corrected in the 2004 FMP.

Table 1 - Summary of Total Area Under Crown Management
MU: Whiskey Jack

Land Type	Area in Hectares		
	Past Plans		Current
	1994-1999	1999-2004	2004-2009
Non-Forested	206,897	304,632	169,043
Other Land	-	1	9,167
Forested			
Non-Productive	88,582	99,693	92,967
Productive			
Protection	30,007	36,194	30,277
Production Forest			
B&S/NSR	134,368	144,601	129,228
Depleted	-	-	-
Working Groups			
Pw	-	858	994
Pr	-	1,731	948
Pj	151,371	224,167	211,040
Sp	253,746	169,223	172,459
Bf	95,996	3,958	3,822
La	-	552	-
Ce	-	4,335	3,631
He	-	-	
Po	92,328	140,371	123,509
Bw	-	16,903	15,936
Ab	-	1,596	1,388
H	-	-	
Total Production Forest	727,809	708,295	662,955
Total Forested Land	846,398	844,182	786,199

Source:
2004 Trend Analysis Report - Table 1
2004-2024 FMP - Table FMP-1 & FMP-2



As stated in the 2004 Trend Analysis, the increase in Pj and decrease in Sp is primarily due to the earlier large burnt areas becoming pine stands in the new 1997 Forest Resource Inventory (FRI) rather than spruce stands. Spruce budworm played a significant role in reducing the balsam fir in the new FRI.

Changes in the forest condition between 1999 FMP and the 2004 FMP were minor. Table 2 shows the descriptions of the forest units used in the various management plans for the Whiskey Jack Forest. Prior to the 1997 FRI, management plans were based on Working Group (grouping of dominate species). The new FRI introduced ecosite information, which allowed for grouping (Forest Units) of areas based on functionality of the site. The current 2004-2024 FMP further refined these forest units to better predict the outcome of management decisions (Forest Operation Prescriptions).

Table 2 - Description of Forest Units
MU: Whiskey Jack

1994	
FU	Desc
Spruce	Sb, Sw, OC WGs
Pine	Pj, Pr, Pw WGs
Balsam	Bf WG
Poplar	Po, Bw, OH WGs

1999			2004	
FU	Desc		FU	Desc
Cones (ES11)	Conifer Shallow	PR<40%	COSHA	Conifer Shallow
		PR>=40%	**PRWMX**	Red/White Pine Mixed
Cones (ES12)	Conifer Shallow		COSHA	Conifer Shallow
SPC (ES20,22)	Spruce/Pine Course	PJ>=60%	**PJDOM**	Jack Pine Dominant
		PJ<60%	**SPDOM**	Spruce Dominant
SPF (ES26,31)	Spruce/Pine Fine	PJ>=60%	PJDOM	Jack Pine Dominant
		PJ<60%	SPDOM	Spruce Dominant
SPF (ES27)	Spruce/Pine Fine		SPDOM	Spruce Dominant
SPF (ES32)	Spruce/Pine Fine		**MIXED**	Mixedwood
PJ (ES13, 14, 25)	Jack Pine	PJ>=60%	PJDOM	Jack Pine Dominant
		PJ<60%	SPDOM	Spruce Dominant
RPWP (ES15,18,24)	Red/White Pine		PRWMX	Red/White Pine Mixed
HDMXC (ES16,19)	Hardwood Course	PW>=30%	PRWMX	Red/White Pine Mixed
		PO<50%+Pw<30%	MIXED	Mixedwood
		PO>=50%+Pw<30%	**PODOM**	Poplar Dominant
HDMXC (ES21)	Hardwood Course		MIXED	Mixedwood
HDMXC (ES23)	Hardwood Course	PO<50%	MIXED	Mixedwood
		PO>=50%	PODOM	Poplar Dominant
HDMXF (ES28, 29)	Hardwood Fine	PO<50%	MIXED	Mixedwood
		PO>=50%	PODOM	Poplar Dominant
HDMXF (ES33)	Hardwood Fine	AB>=50%	**OTHWD**	Other Hardwood
		PO<50%	MIXED	Mixedwood
		PO>=50%	PODOM	Poplar Dominant
CE (ES17, 37)	Cedar		CEDAR	Cedar
LS (ES34,35)	Low Swamp		**SBLOW**	Lowland Spruce
LS (ES36)	Low Swamp		CEDAR	Cedar
BA (ES30, 38)	Black Ash		OTHWD	Other Hardwood

Source:
2004-2024 FMP - Figure 6
1994-2014 TMP - Section 4.7

Comparison of Planned and Actual Operations

The planned operations which were outlined in the Management Plan covering the Whiskey Jack Forest were achieved at levels lower than expected. This section summarizes and evaluates the operations that took place in relations to planned levels.

With changes to demand, the 2004-2024 FMP was able to balance the utilization of spruce, jack pine and poplar from the forest. Increases to spruce and poplar helped offset a decrease in jack pine planned harvest. However, the economy of the forest industry continued to decline with the Abitibi paper mill (Kenora) permanently closing in 2005, Kenora Forest Products idling the sawmill in 2008, the slow-down in production of Weyerhaeuser ILevel (Kenora), the permanent closure of the Domtar (Dryden) paper machines in 2008, the reduction to one-shift at the Domtar Ear Falls sawmill, and the increased frequency of temporary shut downs of other mills.

In 2008, jack pine deliveries to Abitibi's Fort Frances paper mill from the Whiskey Jack forest ceased due to differences in perceived natural resources management practices between the Ministry of Natural Resources and Grassy Narrows First Nations. Customers of the Fort Frances mill who are certified under FSC (Forest Stewardship Council) are not able to utilize raw fibre from areas of contention, which this situation was described as being contentious. Abitibi (Fort Frances) was faced with a decision to continue taking fibre from the Whiskey Jack or to lose several large customers. Ultimately this conflict has lead to Abitibi's notification in June 2008 to surrender the Sustainable Forest License on the Whiskey Jack Forest.

Table 3 and associate graph present the planned harvest volume versus the actual accomplishments. The average annual harvest volume (all species) for the most recent term was 350,940 m3/yr or 49% of the planned volume. The conifer species (Pj, Sb) have been utilized at 61% of planned, while the hardwood species (Po) have been utilized at 39% of planned.

Table 3 - Summary of Planned & Actual Harvest Volumes
MU: Whiskey Jack

Planned Harvest

	Annualized Volume in "000s cubic metres		
	Past Plans		Current
Species	1994-1999	1999-2004	2004-2009
Pw		403	98
Pr		660	178
Pj	268,800	235,223	218,425
Sw		12,463	15,021
Sb	362,700	161,015	163,966
Bf	14,000	14,944	8,237
Ce		1,577	156
La		265	98
Bw		24,965	6,321
Ab		826	1,632
Po	260,100	185,676	304,179
TOTAL	905,600	638,017	718,310

Source:
2004 Trend Analysis Report - Table 3
2004 FMP - Table FMP-23

Actual Harvest

	Annualized Volume in "000s cubic metres		
	Past Plans		Current
Species	1994-1999	1999-2004	2004-2009
Pw			22
Pr		28	272
Pj	193,597	202,624	112,697
Sw			-
Sb	301,214	192,800	118,722
Bf		362	57
Ce		2	-
La		125	233
Bw		88	139
Ab			1
Po	45,399	71,000	118,798
TOTAL	540,210	467,029	350,940

Source:
2004 Trend Analysis Report - Table 3
2008-2009 Annual Reports - AR-4

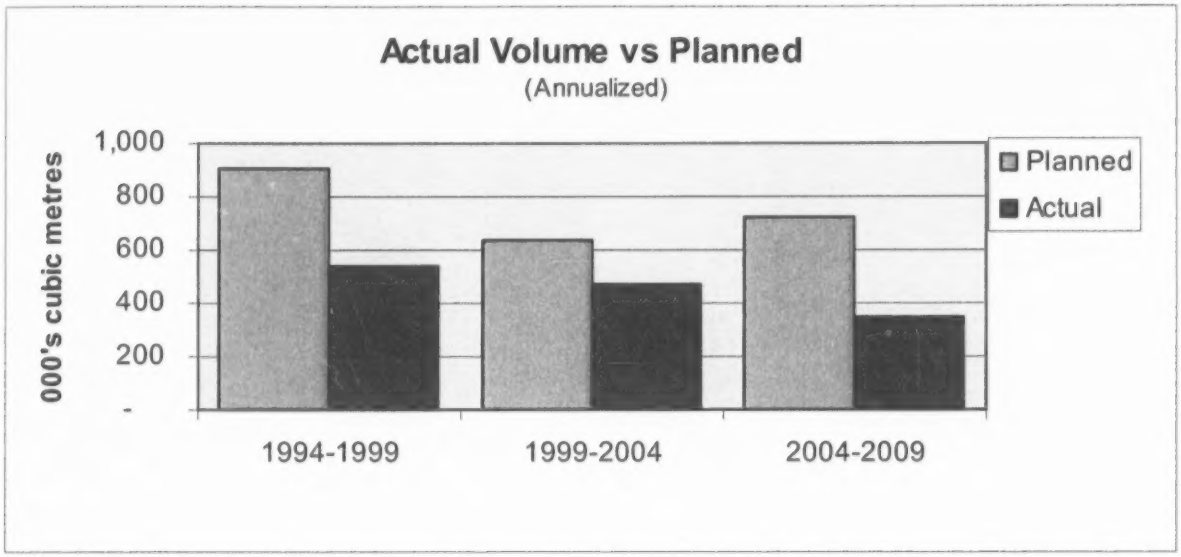


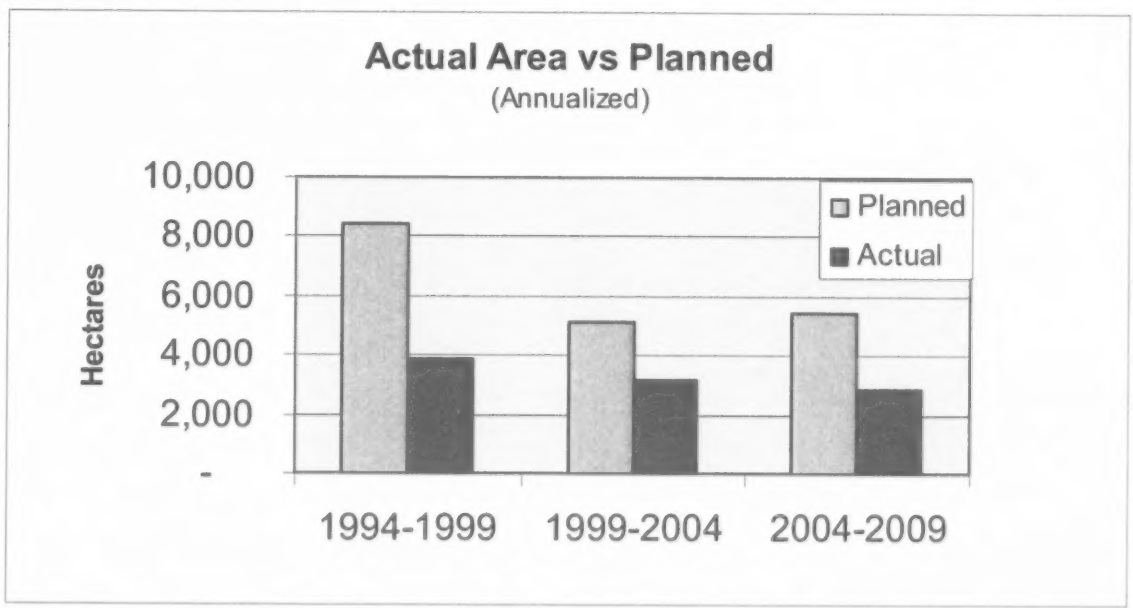
Table 4 and the associated graph show the actual vs. planned harvest depletions area. As stated in the 2004 Trend Analysis report, the market for Poplar began in the mid -1990's with the new hardwood facilities in Barwick (Voyageur Panel – now Ainsworth) and the Trust Joist (now ILevel) mill in Kenora. Increased utilization of all available species contributed to harvesting closer to the planned sustainable levels. However, the Abitibi paper mill was subject to considerable market related downtime in 1999-2004, with the eventual permanent closer of one paper machine.

Harvesting operations over the previous 10-years achieved about 57% of planned levels, with average harvesting of 3,000 hectares annually. As an indication of the economic downturn, the harvest level in 2008/09 was 371 hectares, well below the annual average. This also suggests the earlier years of the 2004-2009 term were heavily harvested to attain a harvest level close to the past average. In fact, upon the closure of the pulp mill in Kenora in 2005, harvest levels increased as production at Kenora Forest Products increased until its temporary closure in 2008 due to market conditions.

Table 4 - Summary of Planned & Actual Depletion Area
MU: Whiskey Jack

	Planned Harvest Area			Actual Depletion Area					
	Annualized Area in hectares			*Annualized Area in hectares*					
	Past Plans		Current	Past Plans				Current	
				1994-1999		1999-2004		2004-2009	
Forest Unit	1994-1999	1999-2004	2004-2009	Harvest	Natural	Harvest	Natural	Harvest	Natural
CONES - COSHA		217	407			143	16	169	6,485
SPC - Spruce - SBDOM	3,156	847	1,251	1,969		531	13	511	6,314
SPF - Balsam	653	415		199		302	8		
PJ - Pine - PJDOM	2,419	2,400	1,462	1,238		1,396	78	918	19,961
RPWP- PRWMX		14	5						468
HDMXC - Poplar - PODOM	2,223	716	1,886	416		435	42	1,082	5,370
HDMXF - MIXED		359	261			298	12	147	2,414
CE - CEDAR			7					1	179
LS - SBLOW		131	132			41	3	24	756
BA - OTHWD			11					6	15
Total	8,451	5,099	5,423	3,822	-	3,146	172	2,857	41,962

Source:
2004 Trend Analysis Report - Table 4
2004-2024 FMP - Table FMP-22
2008/09 Annual Reports - Table AR-1 & AR-6



During the current term (2004-2009), an infestation of Jack Pine Budworm occurred on the Whiskey Jack Forest damaging primarily jack pine, to various degrees, on 208,505 hectares. The Ministry of Natural Resource applied Bt (Bacillus thuringiensis) in 2006 and 2007 on 30,805 hectares to attempt to control the spread of the insect and limit damage to the trees. Although the final impact has not yet been determined, it is expected volume will be lost in some areas not targeted by the Bt program. Areas where Bt was applied seem to have been effective in controlling the insect; however further monitoring will have to take place.

Table 5 provides a summary of age class distribution (all species) for the Whiskey Jack Forest. Earlier terms show a significant shortfall in the 21-40 age class; however, renewal efforts 20-25 years ago are now being realized in this age class as the distribution becomes closer to "normal".

As identified in Table 2, the forest units have changed dramatically between the 3 terms making it difficult to assess the changes in forest condition by FU and age-class. It is believed these forest units in 2004-2009 are fairly static and only minor changes will be required in future plans to allow for future tracking.

Table 5 - Summary opf Managed Productive Forest by Forest Unit
MU: Whiskey Jack

	1994-1999	
Forest Unit	Production	Protection
Spruce	303,100	6,943
Pine	200,840	17,092
BF	106,331	841
Po	117,538	5,131
TOTAL	727,809	30,007

Source:
1994-2014 TMP - Table 4.8.2

	1999-2004	
Forest Unit	Production	Protection
CONES	48,306	21,412
SPC	89,506.0	230
SPF	44,201	63
PJ	197,340	1,674
RPWP	2,960	294
HDWMXC	99,210	9,174
HDWMCF	69,414	737
CE	3,178	111
LS	11,174	2,766
BA	1,750	34
TOTAL	567,039	36,495

Source:
1999-2019 FMP - Table FMP-9

	2004-2009	
Forest Unit	Production	Protection
CEDAR	4,553	114
COSHA	53,315	18,306
MIXED	52,271	4,004
OTHWD	1,593	29
PJDOM	221,358	1,322
PODOM	117,732	3,506
PRWMX	2,405	145
SBLOW	9,413	2,602
SPDOM	190,330	249
TOTAL	652,970	30,277

Source:
2004-2024 FMP - Table FMP-9

	1994-1999	
Age-Class	Production	Protection
B&S	134,368	
FTG-20	149,290	
21-40	28,914	
41-60	108,062	
61-80	75,512	
81-100	115,887	
101-120	51,154	
121+	64,622	
TOTAL	727,809	

Source:
1994-2014 TMP - Table 4.9

	1999-2004	
Age-Class	Production	Protection
B&S	-	-
FTG-20	128,630	8,700
21-40	38,552	2,530
41-60	150,300	6,031
61-80	117,978	10,687
81-100	97,875	5,006
101-120	17,520	1,120
121+	16,184	2,421
TOTAL	567,039	36,495

Source:
1999-2019 FMP - Table FMP-9

	2004-2009	
Age-Class	Production	Protection
B&S	-	-
FTG-20	177,933	1,061
21-40	109,617	7,296
41-60	120,401	3,919
61-80	98,729	7,461
81-100	106,696	6,470
101-120	24,718	1,882
121+	14,876	2,188
TOTAL	652,970	30,277

Source:
2004-2024 FMP - Table FMP-9

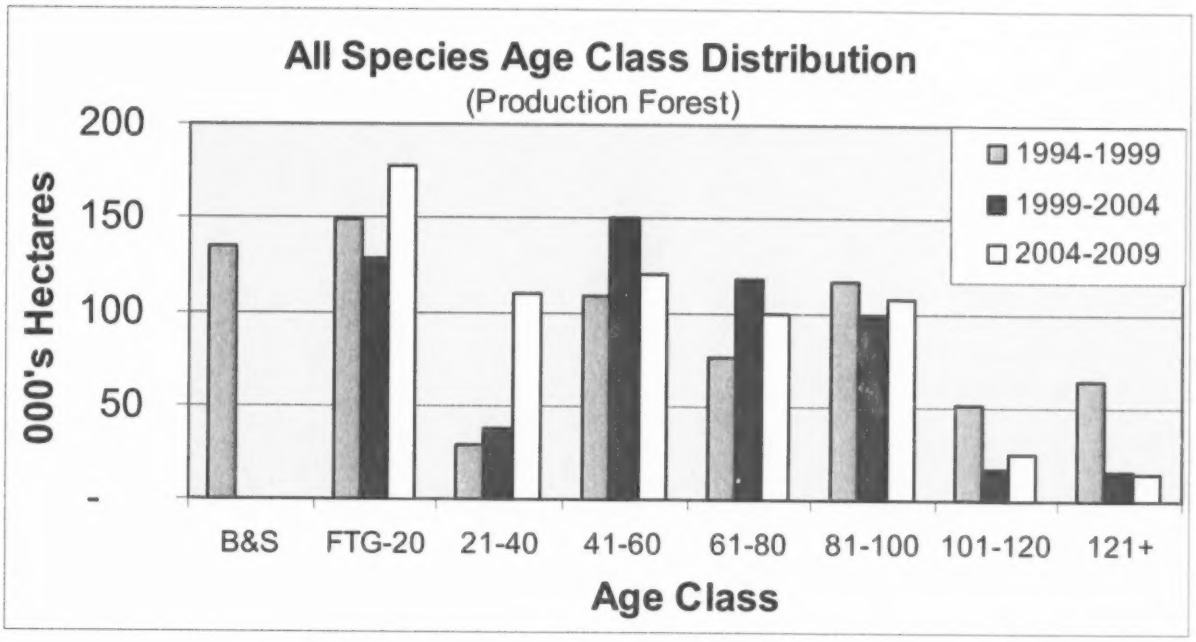


Table 6 shows the actual versus planned renewal, tending and protection operations. The average annual renewal level for the most recent term was 4,221 hectares or 72% of the planned level. The reason for the shortfall is primarily the harvest levels being less than planned. The closure of the Abitibi paper mill and idling of Kenora Forest Products in the later years of this term allowed renewal efforts to be directed to areas not sufficiently regenerated. At the completion of this term (March 31, 2009), the majority of these back log areas had been retreated. The outstanding silviculture program is primarily recent harvest areas.

The renewal program consisted of 34% natural regeneration primarily to poplar, 56% planting primarily to spruce and 10% seeding to primarily jack pine, compared to the planned levels of 37%, 21% and 41% respectively. The increase in planting levels is due to 1) the cut back of harvesting due to the closure or idling of mills and the requirements of ordering tree seedlings 18 months in advance, and 2) the treatment of back log areas requiring more intensive treatments.

Over the past 3 terms, Table 4 indicates 49,124 hectares have been harvested, while Table 6 shows 62,402 hectares have been renewed (naturally, planted, or seeded). These numbers have not been adjusted for areas treated that were harvested prior to 1994 (i.e. silviculture lag), or for areas were retreatments have occurred.

Mechanical site preparation took place on 1,609 hectares of 51% of planned levels. Also ground seeding with mechanical site prep and scarification for natural seeding did not occur during this term as planned.

Manual pre-commercial thinning and cleaning occurred on 274 hectares (8% of planned levels). Chemical cleaning/tending was planned for 2,528 hectares with no herbicide application taking place. Conflicts between a few stakeholders, the MNR and Abitibi have prevented any herbicides being

applied to the Whiskey Jack Forest. Attempts to educate stakeholders on herbicides and the application have not been successful in permitting an herbicide program.

The Ministry of Natural Resources carried out an application of Bt (Bacillus thuringiensis) on 30,805 hectares to prevent the spread of a Jack Pine Budworm infestation.

Table 6 - Summary Report of Renewal, Tending and Protection Operations
MU: Whiskey Jack

	Annualized Area in hectares					
	Past Plans				Current Plan	
	1994-1999		1999-2004		2004-2009	
	Planned	Actual	Planned	Actual	Planned	Actual
RENEWAL						
UNEVEN-AGED MANAGEMENT						
Selection Cut - Harvest						
EVEN-AGED MANAGEMENT						
NATURAL REGENERATION						
Clear Cut	2,405	92	592	295	2,029	1,414
CLAAG					160	
Strip Cut						
Seed tree Cut					2	
Shelterwood Cut						
SUB-TOTAL NATURAL	2,405	92	592	295	2,192	1,414
ARTIFICIAL REGENERATION						
Planting	4,193	5,242	2,337	1,180	1,256	2,379
Seeding - Direct - Aerial	2,337	889	1,914	562		428
- Hand						
- With Site Preparation					1,556	
Scarification for Natural Seeding					903	
Haro						
SUB - TOTAL ARTIFICIAL	6,530	6,131	4,251	1,742	3,714	2,807
TOTAL EVEN - AGED	8,935	6,223	4,843	2,037	5,906	4,221
TOTAL RENEWAL	8,935	6,223	4,843	2,037	5,906	4,221
SITE PREPARATION						
Mechanical	6,434	5,782	4,251	1,595	3,184	1,609
Chemical	400	264	255	50		
Prescribed Burn				19		
Brush Pile Burning						
TOTAL SITE PREPARATION	6,834	6,046	4,506	1,664	3,184	1,609
TENDING						
Cleaning - Manual	35				469	37
- Chemical - Ground				48	1,562	
- Aerial	3,196	4,619	3,408	205	966	
- Mechanical						
Spacing, Pre-Com. Thinning & Impr						
- Even Aged	300	19	500	488	581	237
- Uneven Aged						
Fertilization and Cultivation						
TOTAL TENDING	3,531	4,638	3,908	741	3,578	274
PROTECTION (Insect Pest Control)						
Accelerated harvest						
Salvage						
Pest Control - Ground Insecticide						
Pest Control - Aerial Insecticide						30,805
TOTAL PROTECTION	-	-	-	-	-	30,805

Source:
2004 Trend Analysis Report - Table 6
2004-2024 FMP - Table FMP-25
2008/09 Annual Reports - Table AR-7

Table 7 shows 19,110 hectares were harvested during 1994-1999. Of this harvested area, free-to-grow assessments have been conducted on 18,113 hectares of which 87.5% has been declared free growing. Of the remaining 2,269 hectares; 2,028 hectares have been scheduled to be revisited, indicating the treatments were successful but did not meet the minimum criteria, i.e. height, to be declared free growing. Assuming these areas will become free growing with time, the regeneration success could be 98.6% meeting all regeneration objectives and targets of the FMP.

Table 7 - Harvest Area Successfully Regenerated - Summay of All Forest Units
MU: Whiskey Jack

	Area in hectares (All Forest Units Combined) Even-Aged Management 1994-1999	*Area in hectares* (All Forest Units Combined) Uneven-Aged Management
Total Area harvested (1994-1999)	19,110	0
Total Unsurveyed Area	997	0
Total Area Surveyed for Regeneration Success	18,113	0
Total Area Declared Suceessfully Regenerated	15,844	0
Total Area Surveyed Not Sucessfully Regenerated	2,269	0
NSR		
B&S	2,028	
Not Available for Regen (e.g. Roads)	241	
Other		
Precent of Area Surveyed Declared Successful	87%	0%

Source:
2004 Trend Analysis Report - Table 4
FTG Assessment Data

Conclusion

The 2008/2009 Annual Reports provide summaries and evaluations of operations, an assessment of forest sustainability, achievements of management objectives and conclusions and recommendations for the 2004-2009 term. The tables in this report summarize the current forest conditions as expressed in the approved management plan, and also summarize the operations for the term.

In general terms, the planned operations which were outlined in the Management Plans were carried out, although at a lower level than expected, influenced by things such as market related downtime and closure of mills.

It is believed the evolution of forest units to include ecosite and composition criteria will not have to change moving forward, setting a benchmark for future analysis of forest conditions.

Utilization of all forest species has increased over time with new facilities demanding hardwood species, which allows for more efficient silviculture systems and prescriptions to occur providing for a healthier future forest. Actual yield achieved during this term for all species is 122.8m3/ha versus the planned yield for all species forecast in FMP-21 as 133.6m3/ha.

Renewal treatment occurred on harvested areas with additional retreatments efforts placed on backlog and areas of failed treatments. The absence of chemical tending on the forest may impede achievement of the forecasted forest condition, as described in the FMP. The inability to economically provided opportunity for optimum tree growth, could over time change the species composition of the forest by faster growing (poplar, white birch) becoming more frequent and slower growing, shade intolerant species (jack pine, spruce) becoming less frequent on the forest.

An Independent Forest Audit took place in 2004, conducted by KBM Forest Consultants Inc. The final report included 23 recommendations and 24 suggestions plus 1 best practice, ranging from improving communication, sharing of resources, protection of soils and water, use of herbicides, and reporting procedures.

The Whiskey Jack Forest has been managed by Abitibi-Consolidated and its predecessors since at least the 1950's. The Company is committed to managing the forest on a sustainable basis. The Report of Past Operations, 10-year Annual Reports and this report show the forest is being managed in a manner that will provide for the sustainability of both timber and non-timber values.

References

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